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BRITISH ORNITHOLOGISTS' CLUB

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JOHN J. YEALLAND

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PREFACE

Once again our gratitude is due to Mrs. B. P. Hall for her compilation of this Index. We also appreciate the efforts of all who have supported the *Bulletin* and those who have contributed to make the meetings the interesting and enjoyable occasions that they are.

Attendance at the meetings held during 1966 numbered 185 members and guests.

As in past years, Mr. K. E. Wiltsher, General Manager of the Caxton and Holmesdale Press, has given ready and efficient co-operation.

J. J. YEALLAND.

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Walter, Mrs. V.

Died

The Committee record with sadness the death of Sir Philip Manson-Bahr who was a Vice-Chairman during 1946–1947 and Chairman of the Club from 1949 until 1953.

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BRITISH ORNITHOLOGISTS' CLUB

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JOHN J. YEALLAND

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The six hundred and thirtieth meeting of the Club was held at the Rubens Hotel, London, on the 21st December, 1965.

Chairman: MR. R. S. R. FITTER

Members present: 22; guests, 8

Mr. M. D. England spoke on a visit he and others paid to an area of eastern Portugal, illustrating his talk with many superb coloured slides showing the country and some of the birds, those of *Otis tarda* the Great Bustard at the nest and a family of *Monticola solitarius*, the Blue Rock Thrush being of particular excellence.

Note on Chapin's Swift

by A. PRIGOGINE

Received 22nd August, 1965

Since the description in 1957 of *Apus myoptilus chapini* Prig., its distribution area in the eastern part of the République démocratique du Congo (fig. 1) has been delimited rather exactly by intensive collecting and some personal observations.

This swift exists not only at low altitudes under 1,000 m, as in the neighbourhood of Kamituga and Kitutu (Kivu), but it also lives in the mountains north-west of Lake Tanganyika up to an altitude of 2,000 m. In the north, *A. m. chapini* has been found in the transition forest of Mount Nyombe, but I should not be surprised if further collecting showed its presence also in the region west of Lake Kivu. In the south, *chapini* reaches Mount Kabobo where it was caught even at the altitude of 2,450 m.

In the Maniema I have identified Chapin's swift in different localities, especially in July. As one specimen has been collected at Kama, the presence of this swift in the Maniema is established with certitude.

The same swift exists also in Angola, at Mount Moco, where Rudyerd Bulton collected a specimen on 27th February, 1931. Traylor found that it belongs to the subspecies *chapini*. Without any doubt, this population

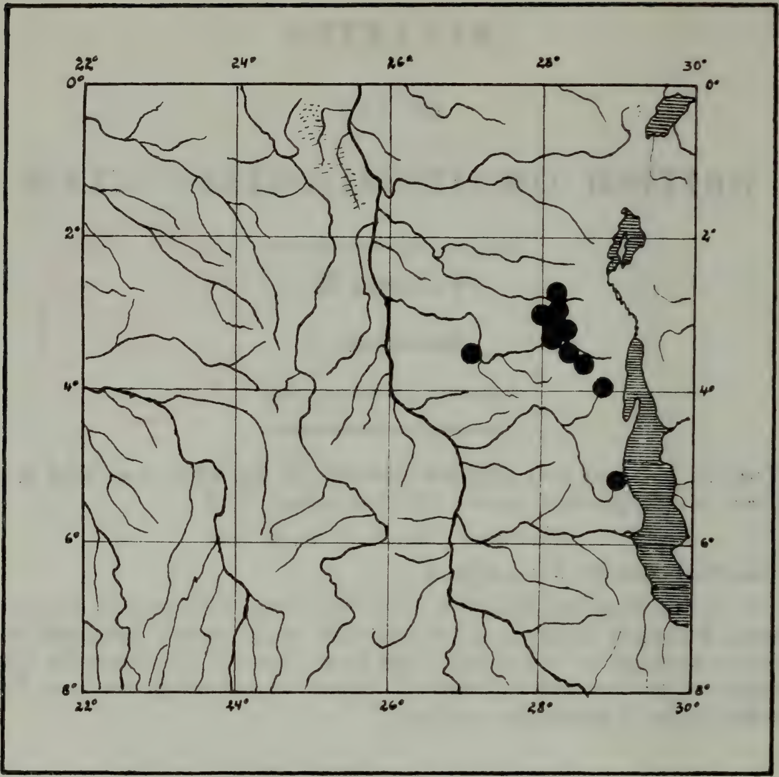

Fig. 1. Distribution of *Apus myoptilus chapini* in the eastern part of the République démocratique du Congo.

is different from the one of the Kivu-Maniema area, Chapin's swift being unknown from the intermediate country.

In Kamituga this bird normally appears about the middle of June, as in 1954, 1956, 1958 and 1964 and even on 30th May, as in 1957 and 1960. From July to September *chapini* may often be seen over the locality of Kamituga. But in October, it becomes rare and I noticed its presence only on the 7th (1956), on the 18th (1957) and on the 26th (1957). Then, in November and December, it is absent from Kamituga. In January it is still rare and only two specimens have been collected on the 8th in 1958. It also made a short appearance on the 21st (1962).

In February Chapin's swift was noticed again rather often over Kamituga, but not in great number. In March it becomes rare and I never saw it myself over Kamituga, though two specimens have been shot on the 7th (1958) and one on the 25th (1953), but on 26th March, 1957 I observed it at Bilembo, quite near Kamituga. In April I only saw it once over Kamituga (on the 27th, 1963) and during the whole month of May it is not generally in this locality.

In other places, in the Kivu area, Chapin's swift has been found from February to May and from July to November.

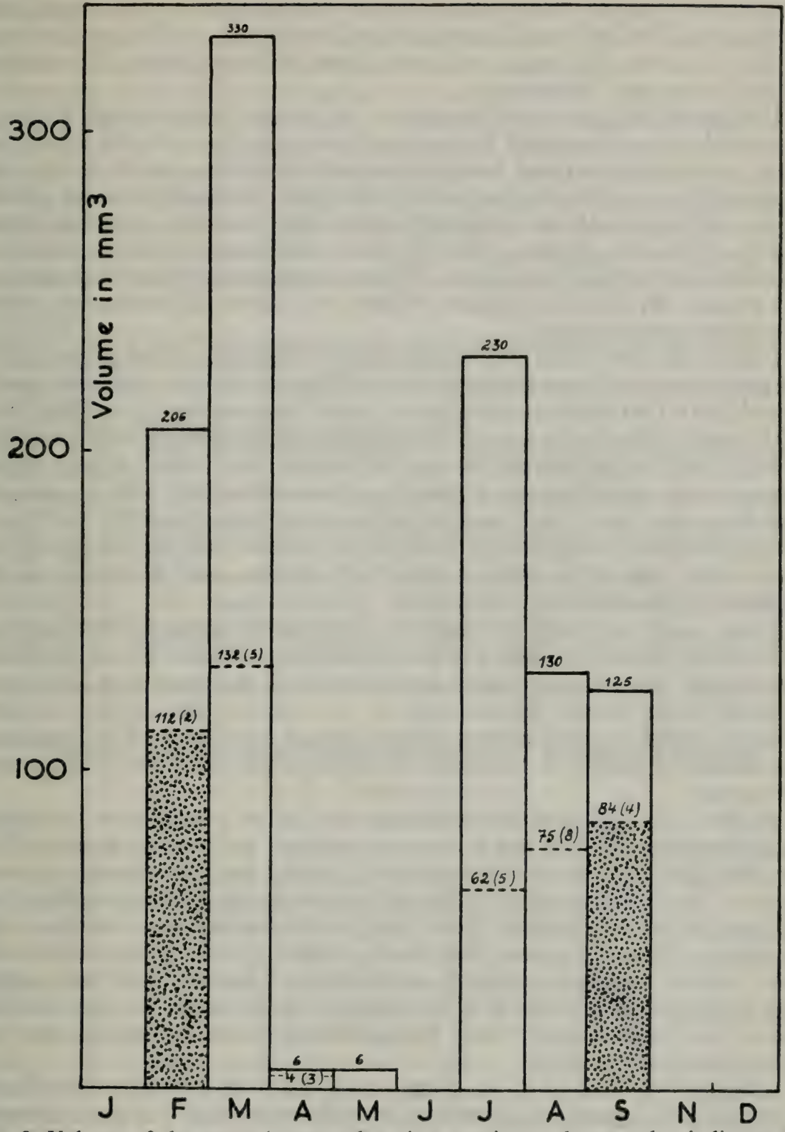

Fig. 2. Volume of the testes (upper value gives maximum, lower value indicates the mean and the number of specimens examined; females with enlarged oocytes collected during months shaded).

If one considers the entire region explored, it appears that *chapini* is present the whole year round except perhaps in December. But even if I was not able to find it during this month, it is not certain that it leaves this region only for such a short time and I feel we can admit that it is present during the whole year. Anyway, it is established that it has local migratory movements. In October-November particularly, it seems to go south and, in fact, the only specimens collected during those months came from Tubangwa (October) and Mubandakila (November), in the southern part of the Itombwe highlands, and even from Mount Kabobo (November) where it was very numerous.

During certain periods of the year *A. m. chapini* joins in large flocks. It is possible to see hundreds flying over Kamituga from July to September which are months without heavy rains. Sometimes these birds fly very low in open places and a great part of my specimens were caught in my garden with a very thin silk net stretched between two bamboo stems, at about 6–8 m. from the ground. On 29th July, 1962 near Kitutu I even met thousands between 12 and 1 p.m. It was very sunny and the birds close to the ground. By fixing a mist-net between two stems of *Pennisetum* several specimens were collected

I have also been told that at the end of July and in the beginning of August, these swifts are so numerous and they fly so low in certain places near Kitutu that children are able to catch them simply by striking them with a stick. That is the way all my specimens from Bionga were caught.

From June to September, during the months with little rainfall, *chapini* appears very often between 1 and 2 p.m. over Kamituga, very numerous and flying very low. I also noticed them several times from 8.30 to 11 a.m. At that time they are generally flying higher up and they are not numerous. Sometimes, but rather seldom, this bird appears over Kamituga in the afternoon, about 4 p.m. and later.

From April to August, Chapin's swift forms generally homogenous flocks without other swifts; it is possible that sometimes *A. barbatus roehli* Reichenow joins these groups and starting in September *A. apus apus* (Linné) forms mixed parties with *A. m. chapini.* On Mount Kabobo Chapin's swift was shot among a flock formed principally of *A. apus apus:* on Mount Nyombe, at Butokolo, *A. schoutedeni* Prig. also joins groups of *chapini.*

At first I thought that the gatherings of Chapin's swift were in relation to its breeding activity, but it does not seem to be the case, because there are two distinct seasons for egg-laying. During the first breeding season, centred on February, it is rather infrequent to see large assemblies, but during the second period, from July to September, this swift is very numerous. Now I suppose that these gatherings are in connection with food supply, especially with the abundance of insects in certain regions and during certain periods of the year. It is the same for the hours at which the swifts appear: their flying altitude is also related to the presence of certain insects.

The reproduction of *A. m. chapini* takes place in February–March and from July to September. Two females with oocytes of 5–6 mm. diameter have been collected in February and September: another female shot in September even had an oocyte of 10 mm. Three females also collected in February and September had enlarged oocytes. The volume of the testes (fig. 2) shows two pronounced peaks. From April to July sexual activity ceases. For the period of October to January I have only four specimens: the gonads of two birds have not been examined and the two females collected in January had gonads at rest, but their tail is in heavy moult. It is difficult to say if reproduction ceases during these months, but for other Apodidae like *Apus affinis*, *Apus caffer* and *Apus horus* there is definitely only one breeding season (see Moreau and Benson). It is necessary to examine the gonads of further specimens collected between October and January to have a true picture of the breeding of *A. m. chapini.*

Recently A. De Roo has studied the moult of *A. m. chapini.* His conclusions will be published in detail elsewhere. For some specimens the moult starts in the beginning of February (A. De Roo, *in litt.*). Yet for other birds it begins only in the latter part of April. The moult finishes, for the first specimens, perhaps in the beginning of June, but the first swift in fresh plumage was taken on 8th July. For the others the moult may continue until the middle of August, the last specimen which had not completed its moult having been caught on 2nd August.

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Hybrids of *Thraupis palmarum* and *Thraupis virens*

by F. Haverschmidt

Received 17th August, 1965

On 20th October, 1963 I collected in the forest near Phedra (Surinam-river) Surinam, out of a treetop, a bird which was at first sight intermediate between *Thraupis palmarum* and *Thraupis virens.*

In general coloration it is olive green as in *T. palmarum*, but the wing-coverts are pale blue as in *virens* and on the crown and on its upper and under parts there are bluish feathers among the green ones.

It is a male in non-breeding condition and is now preserved under my field number 6316 in the Leiden Museum.

Dr. G. F. Mees, curator of birds of that institution, confirmed my identification of the bird as a hybrid and he informed me that there were more intermediate specimens in the Leiden Museum where, in June, 1965, I had the opportunity of examining the series of *T. palmarum* and *T. virens*.

The small series of 27 specimens of *palmarum* from different parts of its range contained no less than 10 (including my specimen from Phedra) which are more or less intermediate, but the series of *virens* contained none.

The intermediate birds which must be considered hybrids are: three unsexed specimens from Costa Rica without further data and bought from Schlüter (two of them marked 5652 and the other unmarked) show a distinct bluish gloss on the wing-coverts and on the back. In the unmarked specimen there is a clear demarcation line between the green crown and the bluish tinge on the back.

Two unsexed specimens from Ecuador without further data and also bought from Schlüter (both of them marked 5652) have a distinct bluish on the crown and on the back.

A male collected on 18th October, 1883 at 2,000 feet on Mount Roraima, British Guiana (no. 3713) by W. L. S. Laat has a bluish back, breast and abdomen. Here too is a striking difference between the green crown and the bluish of the back.

A male in breeding condition collected on 8th October, 1911 at Paramaribo, Surinam by W. C. van Heurn (no. 2326) has a distinct bluish on the back and, though to a lesser extent, on the wing-coverts; there is also a marked difference between the green crown and the bluish on the back.

A male from Bahia with no further data which died in the Zoo at Rotterdam and received at Leiden in November 1923 (no. 5274) has the head pale bluish-grey as in *virens* and a bluish tinge on the wing-coverts.

The most striking of all, however, is a male imported from an unknown locality which died in the Zoo at Rotterdam, which was received at Leiden in February 1924 (no. 5308).

It has the bluish-grey head of *T. virens* and on the upper and under parts including the rump it is partly pale blue and partly olive green. It is indeed so striking as to be almost unbelievable that this specimen was not detected before as a hybrid.

In Surinam both *T. virens* and *T. palmarum* are among the most numerous birds and they are very often feeding in mixed companies.

André Suchetet does not mention in his *Des hybrides sauvages*. Vol. I 1896 any hybrids of these two species.

A. P. Gray lists in her *Bird Hybrids* 1958: 244, though this work is rather incomplete where wild birds are concerned, two hybrids of *T. episcopus* (= *T. virens*) and *T. ornata* which were reared in confinement.

Racial variation in the southern populations of *Caprimulgus rufigena* Smith

by P. A. Clancey

Received 7th September, 1965

Bowen (1930) was the first worker to propose the subdivision of the southern block of populations currently grouped in the nominotypical race of *C. rufigena* Smith, 1845: eastern Cape Province, South Africa, by proposing *C. r. quanzae* Bowen, 1930: Vila General Machado, Bie-Cuando Cubango, Angola. Bowen's Angolan race has not been generally accepted by workers (see in particular Chapin (1939) and Traylor (1960)), but the name has in recent years again come into some prominence through its use by Grant and Mackworth-Praed (1954; 1962) for the populations of northern South-West Africa and Angola.

During the course of a recent study of southern African nightjars, I had cause to examine fairly adequate material of *C. rufigena* from most of its established range in zoogeographical South Africa, the material used being drawn from the collections of the Durban and South African Museums, and the National Museum of Rhodesia, Bulawayo. Critical study of the assembled material shows that the populations which breed in South-West Africa, the northern Cape in Gordonia, Kuruman and Bechuanaland districts, and western Bechuanaland Protectorate and the Kalahari, can be arranged in a satisfactory race, as outlined by Grant and Mackworth-Praed, on the basis of lighter and greyer upper parts, with much reduced black and sepia scapular patches and a more laterally constricted coronal streak. The hind-neck band inclines more to tawny than ochraceous, and the ear-coverts are also rustier, less brown. There also appears to be a fairly convincing size difference, though more measurements of adult birds from South-West Africa and Bechuanaland are needed before this can be satisfactorily settled, the wings of ♂♀ measuring 153–161, as against 160–173 mm. in a long series from the Cape, Transvaal and Rhodesia. Three adult ♂♂ from South-West Africa have tails 117, 117.5 and 119, while 10 ♂♂ from Cape and Transvaal localities have tails of 119, 120, 121, 122, 124, 127, 127.5, 129, 132, 138 mm.

For the pale, greyish backed, deserticolous populations of *C. rufigena*, Grant and Mackworth-Praed use *C. r. quanzae*, named on a population of a high rainfall area of Angola. I have seen no material from Angola, but a good series from Zambia shows no marked difference in colour or size to *C. r. rufigena*, as understood on the basis of topotypical Cape material, and I believe both Chapin and Traylor to be correct in their assumption that *C. r. quanzae* is a synonym of *C. r. rufigena*. Grant and Mackworth-Praed, however, overlooked the earlier and quite unequivocal name *Caprimulgus damarensis* Strickland, 1852: Damaraland (*vide* Strickland, in Jardine's *Contr. Ornith.*, 1852, p. 123), which is available for the pale, greyish dorsalled South-West African, northern Cape and western and south-western Bechuanaland Protectorate populations; also presumably (*fide* Grant and Mackworth-Praed) those of south-western and southern Angola.

The paler coloration and reduction in size of the dark coronal and scapular striae in *C. r. damarensis* is evidently an adaptation in sympathy with the lighter substrate of the arid biomes inhabited by this taxon during the period of its nidification (*c.* October—March). *C. r. rufigena* is a form of the moist east of southern Africa and areas to the northward, with a darker substrate, its range in the south thrusting south-westwards into the Karoo of the Cape. Both *C. r. rufigena* and *C. r. damarensis* are highly migratory, spending the southern winter months further north in Africa, *C. r. rufigena* at least reaching Nigeria, the Cameroons and the Sudan, but the apparent trends towards shorter wing and tail-lengths in *C. r. damarensis* presuppose that the two taxa are allohiemal.

For the loan of material I am indebted to Professor J. M. Winterbottom, Director of the Percy FitzPatrick Institute of African Ornithology, Rondebosch, and Mr. M. P. Stuart Irwin, Keeper of Vertebrates, National Museum of Rhodesia, Bulawayo.

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Remarks on two European Wigeon x Northern Pintail hybrids

by JAMES M. HARRISON AND JEFFREY G. HARRISON

Received 1st June, 1965

Introduction:

The loan of two hybrid specimens between the European Wigeon, *Anas penelope* Linnaeus and the Northern Pintail, *Anas acuta* Linnaeus, the one of known parentage and the other a wild-shot bird, has provided us with an opportunity to make a direct comparison the one with the other and so assess the characters shown by each. It has also enabled us to form an opinion as to the parentage of the wild-shot example.

Unfortunately the direction of the cross of the bird of known parentage was not recorded, but both the specimens are so very similar that there can be no doubt, in our opinion, that the wild-shot bird is of identical parentage.

This latter specimen (Hancock Museum collections) from its remarkable face pattern could easily have been thought to be a hybrid involving the American Wigeon, *Anas americana* Gmelin, but comparison with the example of known parentage shows that this is not so.

Description of specimens:

1. *Anas penelope* x *Anas acuta* ♂
   Bred 1909 by Sir Richard Graham Bt., Ring No. 1909 R.G.
   Shot 3 xii. 1913, Netherby, Cumberland. Carlisle Museum collection, No. 1—1914.

UPPER PARTS:

Back adjacent to neck and mantle: grey and white vermiculations, slightly coarser than in either of the parent species.

Lower back and rump: plumbeous-grey with darker centres to feathers, less pure grey than either parent.

Upper tail-coverts: proximal part whitish-grey, some with pale brownish crescents; distal coverts black with inner edges brownish-white as in Pintail; central pair elongated, in length intermediate between those of parent species.

Rectrices: as in drake Pintail.

UNDER PARTS:

Breast-shield: pale vinaceous as in drake Wigeon, rest of breast silvery-white.

Belly and vent: silvery-white, very finely vermiculated with grey. Whole of under parts show some retained eclipse plumage.

Under tail-coverts: mostly black, some outer feathers with white edges as in Pintail; a few brown and white retained eclipse feathers.

Rectrices: very pale sepia.

Flanks: vermiculated grey and white, slightly coarser than in Pintail. At root of tail whitish, faintly vermiculated grey.

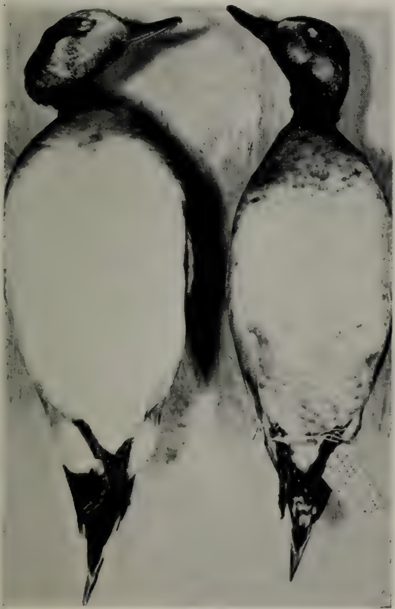
WING:

Upper surface: lesser and median wing-coverts uniform grey, greater somewhat paler, with tips of ultimate series anteriorly pale grey and posteriorly Vandyke Brown (Ridgway, III. 5).

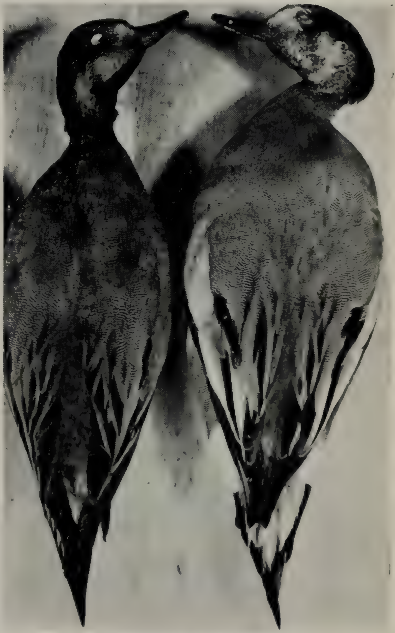
Speculum: bronze-green, intermediate between parent species, sub-terminal border black, terminal edge palest bay.
Scapulars: upper scapulars as mantle, but with dark centres. Median as mantle, upper series only with black on outer vanes to produce vestigial black patch, where in drake Pintail, prominent black flashes. Longest scapulars sepia, on outer vanes pale grey. Feather shafts and narrow adjacent area pale grey.
Primaries: sepia, darker at tips and on outer vanes.

UNDER SURFACE:
Coverts and foredge of wing: pale sepia finely vermiculated whitish; long coverts uniform pale grey.
Axillaries: white, distal half finely peppered pale sepia.
Primaries and secondaries: pale sepia.

HEAD AND NECK:
Forehead and crown: rusty-brown, merging over rest of head to nape dark coppery-brown, streaked with dark sepia.
Nape: dark metallic coppery reflections.
Back of neck: dark metallic green.
Lores to sides of neck: Clay colour (Ridgway, V.8), divided by vertical ''bridle'' running obliquely behind eyes, of dull greenish-black spots. Rest of cheeks surrounding eyes, blackish reflecting dull copper, most pronounced over ear-coverts and on sides adjacent to nape.
Chin, throat and front of neck: black reflecting dull green.



Wigeon x Pintail
(Left) the wild-shot bird.



Wigeon x Pintail
(Right) the wild-shot bird

2. *Anas penelope* x *Anas acuta* ♂

1st February 1948. Mouth of river Esk, Solway Firth.

This specimen being wild-shot is of unknown parentage and age: it is in full adult winter plumage. Its characters are so similar to the previous specimen that a detailed regional description is therefore unnecessary, and only the individual differences will be stressed.

Generally the bird is somewhat brighter both above and below, and the characteristic Pintail scapular markings are more accentuated.

There is a difference in the rump character for the feathers are finely vermiculated grey and buffy-white, and there are also some retained eclipse feathers. On the flanks at the root of the tail this area is more distinct and palest buff.

Measurements in mm.	*Carlisle Museum specimen* 9. 1. 1914.	*Hancock Museum specimen Irwin Coll.*
Wing:	= 261	= 269
Bill:		
Length from feather margin	= 40	= 42
Width at nostrils	= 17	= 18
Width at widest point	= 17	= 18
Tarsus:	= 53	= 46.5
Middle toe with claw:	= 53	= 61
Tail:	= 116	= 145

Discussion:

These two hybrids are broadly intermediate between the two parent species, except in so far as the characters of the head and neck are concerned. This is manifest in the European Wigeon breast and flank characters and in the modified Pintail upper parts.

The characters of the head and neck show varying degrees of bimaculation, as shown by hybrids of European Wigeon x Northern Shoveler, (Harrison, 1964).

It is of considerable interest that superficially the colour of the cheeks, crown and sides of neck, and the distribution of the metallic reflections bear a remarkable resemblance to the American Wigeon thus providing yet another instance of reversionary characters resembling another species being exposed by interspecific hybridisation.

However, were the latter species involved in the two present examples, one would have expected the strong vinaceous breast colour of *A. americana*, which is also the colour of the flanks in that species, to have appeared in the flanks of the hybrid individuals.

Also the metallic reflections behind the eyes in the American Wigeon are predominantly green, whereas the two hybrids reflect either green or copper according to the angle of light incidence.

C. J. O. Harrison (1963) in an extensive review of the post-ocular green stripe as a plumage character of the Anatinae, and its occurrence in a number of hybrid individuals, describes the presence of the character in the American Wigeon as a narrow ill-defined stripe mixed with black feathers, and also refers to the vestigial presence of the character in drakes of the European Wigeon.

The widespread presence of this in so many of the Anatinae as shown by Harrison (*loc. cit.*), no doubt accounts for the green head reflections of the two hybrids herein described.

Summary:

Two hybrids between the European Wigeon and the Northern Pintail are described, one being of known parentage. While they are predominantly intermediate, the head and neck pattern shows a basic bimaculated state, and a post-ocular coppery-green stripe, which is considered to be reversionary towards the American Wigeon.

Acknowledgments:

We are very grateful to T. Tynan, of the Hancock Museum and R. W. Wagstaffe, of the City of Liverpool Museums for the loan of the wild-shot hybrid from the former museum.

For the loan of the Netherby hybrid, we are indebted to E. Blezard, of the Carlisle Museum, and also to his assistant, A. Allison, who relaxed the bird from its original mounted state into a study skin on our behalf.

We are also most grateful to Dr. Pamela Harrison for the photographs illustrating this paper.

Footnote:
Since writing this paper we have been presented with a further drake and two intersexes of this hybrid by Mrs V. M. Burnett, who reared all three from the same clutch three years ago. The drake shows the same basic features as the two specimens just described and is of known parentage, Pintail ♂ x Wigeon ♀.

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A case of symmetrical albinism in a Skylark

by JAMES M. HARRISON

Received 2nd June, 1965

It is well known that albinism in birds can take one of several forms; that it may be minimal affecting only a few feathers; in fact it may amount from much to little, or be almost total except for a few normal feathers peculiar to the species affected. The unfeathered parts may also share in this pied state though the irides in such individuals are of normal colour, providing a ready distinction between albinism and the true and pathological albino.

As a rule such cases of the pied state exhibit an irregular distribution of the white areas, which may often be well described as a haphazard mosaic. However, cases are met with periodically in which whiteness has a curious and almost perfect symmetrical distribution.

Such a condition in a Skylark, *Alauda arvensis arvensis* Linnaeus is herein described, and as can be seen from the plate, the specimen exhibits a remarkable degree of symmetry.

The bird, in which the sex was unascertainable was obtained at Cley, Norfolk, on 1st February, 1965. The symmetrical nature of this individual is indeed remarkable; it is in fact almost numerically symmetrical, there being a difference in numbers of but one in the long remiges, *viz.*, seven white feathers in the right wing as against six in the left.

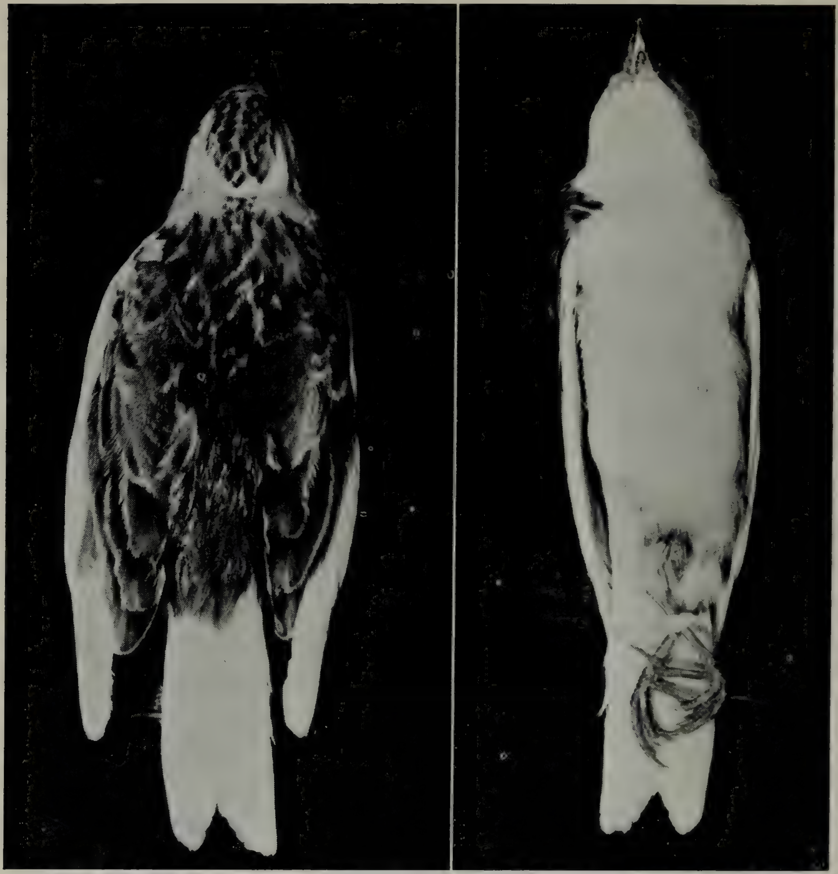

Photo by Pamela Harrison

Symetrical albinism in a Skylark

The interesting problems of symmetrical albinism in birds has been somewhat neglected, as indeed have most abnormal plumages, until in comparatively recent times, and even now no explanations of such symmetrical cases have been offered.

Naturally enough explanations of this condition must, in the present state of our knowledge, be speculative, though a number may be accounted for by a heterozygous state, *i.e.* they are genetic in origin and are therefore hereditary in nature, and occur irregularly in the species affected.

As has recently been shown by different authors, there are various causes for the albinistic state, amongst which may be mentioned trauma (Nero, 1954). Jeffery G. Harrison (1953) describes symmetrical albinism in the wings of four different species as follows, Goosander, *Mergus merganser merganser* Linnaeus, Golden Plover, *Charadrius apricarius* Linnaeus, Rook, *Corvus frugilegus frugilegus* Linnaeus and Curlew, *Numenius arquata arquata* (Linnaeus); the last case would appear to have been leucistic as the wings were described as isabelline.

In this paper it is postulated that there is some physiological defect in which the precursors of pigment have failed or that the white of the albescent plumage is due to an absence of pigment within the feather, and that there may be some abnormality in the wings that is preventing the total or partial elaboration of the pigment, either directly from the blood stream or by means of oxidising agents, absorbed from the exterior to act on colourless pre-pigments.

Recently, Rollin (1964) has written at length on non-hereditary and hereditary abnormal plumages, invoking dietary deficiency as responsible for much of the albinism seen in wild birds. He has also (*loc. cit.*) given some differences by which to separate hereditary from non-hereditary albescence, claiming that in hereditary albescence the white feathers show the presence of some pigment. To establish this as a universal principle beyond dispute is going to require some very intensive study over an immense amount of material since albescence is specifically a very widespread condition.

It must yet await proof that symmetrical plumage anomalies can be occasioned by non-genetic factors *spontaneously*, and in the writer's view it is unlikely to be established. Of course the condition could possibly be induced by selective plucking, or by some other traumatising process.

We have very clear proof of genetic origin in at least two species. The first of these is of course the case of the chicks of the melanistic mutant pheasant, *Phasianus colchicus* var. "*tenebrosus*" Hachisuka (1927).

In this mutation the downy young exhibit symmetrical albinism of the extremities of the wings, a state which is continued in the first definitive primaries but not into adult life. These latter feathers show some pigmentation, supporting Rollin's hypothesis (*loc. cit.*). They also commonly exhibit albinism of the head and anterior part of the neck, and some show white eye stripes or white post-ocular stripes which do not always conform symmetrically. Also the abdomen is commonly albescent.

The second species (and no doubt there are others) to show symmetrical albinism of the wing-tips is the Little Ringed Plover, *Charadrius dubius curonicus* Gmelin, in which it is to be seen in the downy plumage only; *i.e.* as a normal character.

This condition of albinism, etc., of the wing-tips could conveniently be referred to as "acro-albinism"—leucism, etc., and can be seen in otherwise normally plumaged pheasants, *i.e.* non-melanistic *Phasianus colchicus* L. It is evident that there are some definite fixed and constant loci for albinism in birds, a fact not without significance. (Harrison, J. M., and Harrison, J. G., 1961).

While, of course, in the present state of our knowledge there can be no proof, it is in my opinion, a reasonable assumption that pattern, whether it be expressed in distributions of varying degrees and shades of pigmentation, or by the symmetrical distributions of contrasting areas of pigmentation and lack of pigmentation, is of genetic origin. This is, of course, the same thing as saying that symmetrical albinism is hereditary. Instances of patterns due to contrast in colour and lack of colour, in the normal morphology of different species readily occur to mind, and often represent important signal characters.

If the above assumption in these cases is correct, then it is clear that the white feathers in some cases of hereditary albinism do not always show some pigmentation as a criterion of their hereditary nature.

That albinism is of importance in evolution would seem very unlikely, at any rate to any extent, but that it may reflect reversion is, in the writer's opinion, highly probable. The whole question as to whether self-coloration, as white, black or one of the neutral tints preceded pattern in evolution, is a matter of interest. It is certain that by melanism occult patterning is often completely masked, just in exactly the same way that in some cases of depigmentation, *i.e.* leucism, a ghost pattern of the normal markings of the species can often be discerned. The frequency with which such instances occur over a very wide range of species both in vertebrate and invertebrate forms in Nature suggests that the whole phenomenon is to be regarded as basic and fundamental.

The hypothesis advanced by Harrison (1953., *loc. cit.*) of an interference with the normal course of the bio-chemical colour development within the feathers, is, of course, basically one of an alteration of fundamental physiology, and this could well depend upon nuclear genetics and support the hereditary nature of cases of symmetrical albinism.

Undoubtedly part of the fundamental aspect in the deposition of areas of pigmentation, or equally of lack of pigmentation has been the establishment during the long course of evolution of tracts receptive or resistant to the phenomenon of pigment deposition. Bonhôte (1905) called these tracts "poecilomeres". A recent instance of such a case where albinism has occurred in a tract reproducing a specific unit character, or signal character, peculiar to another species in the same genus as the species in which it has occurred, is recorded by Woodward (1961). In this instance the subject of the albinism is a male Blackbird, *Turdus merula merula* Linnaeus, in which the prominent white crescent on the front of the breast recalls the characteristic specific unit character of the Ring Ouzel, *Turdus torquatus* Linnaeus.

It is in just such cases that phylogenetic affinities are reflected, and once again stresses the essential difference between symmetrical albinism as a hereditary manifestation, as distinct from the haphazard albinism of traumatic or dietary or other non-genetic origin, which borders on the pathological.

The case recorded by Woodward (*loc. cit.*) also exhibited bilateral postocular white stripes; pale eye stripes are a character shown by various other members of the genus *Turdus.*

It is, of course, also possible that depigmentation induced by a controlled artificial diet, or a combination of an unnatural and a percentage of natural factors, as described by Rollin (1959) could possibly operate along tracts which are pigmented under normal living conditions and so give rise to a degree of symmetrical albinism, but it is however, one would think, most unlikely that every case of this condition would be due to such a dietary deficiency acting in just this manner.

From the evolutionary aspect it would seem therefore that such factors, when occasioning symmetrical albinism and other plumage phenomena in birds, and also mammals, act as markers by exposing occult specific unit characters in some cases where they are least expected, or in others giving rise to bold symmetrical patterns as in the present instance.

The case of Woodward's Blackbird (1961), quoted above, provides an instance of the exposure of susceptible specific unit character tracts by apparently extrinsic and non-genetic influences, and illustrates well the fact, already noted, that melanism often masks potential patterns until these are disclosed by some disruptive biological process resulting in a striking discontinuous variation. (*c.f.* Harrison, J. M., 1953, Effects of Hybridisation).

Indeed just such an instance in a common mammal was recorded by David L. Harrison (1962). The case described occurred in a dog Fox *Vulpes vulpes crucigera* Bechstein which was killed on 13th December, 1961, near Brasted in Kent. This individual exhibited symmetrical albinism of both hind extremities, a similar white pattern of the hind feet occurs frequently in the *V. v. pusilla* Blyth with a range in N. W. India, Baluchistan and Persia to Iraq.

Summary:

A case of symmetrical albinism in a Skylark is described, and is discussed in the light of some recent research into albinism and allied problems in birds. It is suggested that symmetrical albinism, etc. of the wing-tips be referred to as acro-albinism, etc.

Acknowledgments:

My thanks are due to Dr. Jeffery G. Harrison who was instrumental in getting the specimen for me, and also for helpful comments on this note. I am also much indebted to Dr. Pamela Harrison for the photographs of the specimen.

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The taxonomic affinites of the New Guinea genera *Paramythia* and *Oreocharis*

by C. J. O. HARRISON and S. A. PARKER

Received 8th October, 1965

SUMMARY

Paramythia and *Oreocharis* are currently regarded as aberrant genera of Dicaeidae. They have been compared only with the Sturnidae and Sylviidae. *Paramythia* resembles a bulbul, Pycnonotidae, and the two genera were therefore compared with those of the latter family and the Dicaeidae. Filoplumes, rictal bristles, tarsal scutes and nostril shape, were found to be shared characters which did not indicate relationship. The general appearance, plumage pattern and colour, bill shape, tongue, stomach, and

type of nest, appeared to indicate a link with the Pycnonotidae. The only apparent link with the Dicaedae lay in the vestigial tenth primary of *Paramythia*, *Oreocharis*, and most species of *Dicaeum*. Studies on other groups have shown that this may be an adaptive feature and not an indication of relationship. On the present evidence it is considered better to regard *Paramythia* and *Oreocharis* as genera of the family Pycnonotidae.

INTRODUCTION

When examining skins of the monotypic New Guinea species, *Paramythia montium*, S. A. Parker noticed the strong resemblance of this species to the bulbuls, Pycnonotidae and subsequently initiated this study. The species had been assigned to the flowerpeckers, Dicaeidae, by Mayr (1933) who had compared its characters with those of other families with which a relationship had been suggested, namely the Sturnidae and Sylviidae, but not with other taxa outside New Guinea. One species of Pycnonotidae, *Hypsipetes affinis*, occurs in the Moluccas, but otherwise the bulbuls come no nearer than Indonesia, Borneo, and the Philippines.

There are four aberrant genera in New Guinea, *Paramythia*, *Oreocharis*, *Rhamphocharis*, and *Melanocharis*, which are usually placed with the Dicaeidae, and in the present paper the hypothesis of a possible relationship of the first two of these to the Pycnonotidae is examined. These two monotypic genera contain the related species *Paramythia montium* and *Oreocharis arfaki*. Any conclusions concerning these two may affect the ultimate placing of *Pardalotus*, and there are some doubts concerning *Rhamphocharis* and *Melanocharis*. For the purposes of comparison in this paper it has therefore been necessary to limit the Dicaeidae to the typical genera of *Prionochilus* and *Dicaeum;* and in this context the term ''Dicaeidae'' will refer only to these two.

1. GENERAL APPEARANCE.

The Pycnonotidae are small to medium-sized birds, with rather long, soft fluffy plumage; and the sexes usually alike. The tail is long to medium; forked, square-tipped, or graduated. The Dicaeidae are very small birds with not unduly long or soft plumage, sexes alike or different and the tail short.

Both *Paramythia* and *Oreocharis* have soft downy plumage, a fact remarked on by Mayr (1933). *Paramythia* is medium-sized with a long graduated tail. *Oreocharis* is small, with a shorter tail, longer than the largest Dicaeidae species, and nearer the size of *Pycnonotus squamatus*, with a tail-length comparable with the latter. The sexes are similar in *Paramythia*, dissimilar in *Oreocharis*.

2. FILOPLUMES

The grouping of these two genera with the Dicaeidae was influenced by the presence in all of them of filoplumes. Since filoplumes are also present in the Pycnonotidae this is not necessarily diagnostic. The presence of numerous long wiry black filoplumes on the flanks in both *Paramythia* and *Oreocharis* is a peculiarity that links the two but does not provide a clue to their relationship with other genera.

3. PLUMAGE PATTERN AND COLOUR

(a) *Paramythia*. The sexes are alike. The birds are green on mantle, wings and rump; dull blue on the under side, around the neck and upper mantle, and on the tail; while the under tail-coverts and edges of the flanks are chrome yellow. There is a glossy blue-black shield on the throat and upper breast, and the same colour extends to the lores and forehead. The nape, hind-crown, and a stripe over the eye are white, forming a crescent on the posterior part of the head which is partly concealed by a broad crest of elongated blue-black feathers with rounded ends, arising on the crown in the region between the orbits and overlaying the short white nape feathers. In the young bird the green tint extends onto the neck and nape, the white being much reduced; and there is a green tint on the breast, the blue-black being confined to an ill-defined area of the throat.

There are two species of Pycnonotidae with similar general colouring. *Pycnonotus cyaniventris* is green on mantle, wings, rump and tail, and is grey on the under side, neck and head, with yellow under tail-coverts. *P. atriceps* is green on the mantle, yellowish-green on wings, rump and tail; grey on the neck and under side; yellow on the under tail-coverts and edges of the flanks; and the head and neck are glossy purplish-black. In head-colouring *Paramythia* resembles *P. sinensis* which has a similar crescentic white area from the eye back across the nape, partially hidden by the longer dark feathers of the crown. Short feathering on the nape and a crest formed by elongated feathers arising in the region between the orbits is typical of the Pycnonotidae. *P. melanicterus*, a yellow and green bulbul with a glossy blue-black head, has a crest of elongated feathers with rounded tips which is precisely similar to that of *Paramythia.*

(b) *Oreocharis.*—Plumage relationships are less obvious in this species. The female is green dorsally, with a blue tail. There are a few vestigial yellow tips to tertials and inner secondaries. The sides of the head, throat and upper breast are grey, and there are pale tips to the ear-covert feathers. There is a zone of yellow bordering the grey breast shield and extending along the flanks to the yellow under tail-coverts, the belly being white. The yellow and white feathers have dark crescentic patterns which might be evidence of a relict pattern preceding the uniform colouring of any of these taxa (Harrison 1963a, 1963b). The bulbul *P. tephrolaemus kikuyuensis* is green dorsally and greenish-yellow ventrally with the entire head grey and a grey breast shield. It has a generalised resemblance to the female of *Oreocharis*, which is increased by such points as the pale throat and small pale markings on the ear-covert feathers. The small species *P. squamatus* has patterned feathers on the breast and flanks; and on the hind-flanks, where the earlier forms of markings tend to persist, there are black crescentic markings on pale feathers, comparable to the pattern found on *Oreocharis*; but on the breast these become black centres to pale-edged feathers.

The male of *Oreocharis* bears a strong superficial resemblance to *Parus major* (Paridae). As in the female the mantle, wings and rump are green and the tail blue. There are conspicuous yellow tips on the outer webs of the inner secondaries and tertials. The head is mainly glossy black, and this extends on a small shield on the upper breast, and dorsally ceases at the mid-crown. The ear-coverts form a bright yellow patch, and the under side is yellow, with an irregular stain of chestnut-red on mid-breast and belly. The only bulbul with a similar pattern is *P. leucogenys*, which is mainly brown and white with yellow under tail-coverts, but with a black head and breast shield and with ear-coverts forming a white patch. The light tips to some of the remiges occur also in *Ixonotus guttatus*, which has marked pale tips to inner secondaries and tertials, and also on rump and wing-coverts, but is otherwise drab above and white below.

(c) Comments. From the above descriptions it is clear that, in spite of their apparent differences, the details of colour and pattern in the plumage of both *Paramythia* and *Oreocharis* are parallelled by similar components in the plumages of species of Pycnonotidae. There appear to be no similar parallels in the plumages of species of Dicaeidae.

4. TARSAL SCUTES

The Dicaeidae have smooth tarsi without obvious evidence of scutes. Many species of Pycnonotidae have smooth tarsi, but some, *e.g. P. sinensis* and *P. tephrolaemus*, have a row of very faintly defined scutes on the anterior surface of the tarsus. The smooth tarsal condition of *Paramythia* and *Oreocharis* could be equally related to either family.

5. RICTAL BRISTLES.

Large rictal bristles are present in many species of Pycnonotidae but thay may vary considerably. Those of *P. cyaniventris* are few and fine, and those of *P. squamatus* are very reduced in size and number, and in neither species are they very apparent. Groups of fine rictal bristles are also present in the Dicaeidae. *Paramythia* shows a few short fine rictal bristles that are not easy to detect, and *Oreocharis* appears to have none.

6. BILL SHAPE

The bill of *Paramythia* tapers evenly towards the tip, with a slightly curved culmen. It is broad at the nostrils but laterally compressed towards the tip. The tip of the upper mandible projects slightly and there is a small tomial notch posterior to it. The bills of species of Pycnonotidae such as *P. sinensis*, *P. atriceps* and *Ixonotus guttatus* closely resemble that of *Paramythia* in shape and have a similar notch posterior to the slightly projecting tip of the upper mandible. The bill of *Oreocharis* is shorter and stouter, without an overhanging tip and with a poorly defined notch. It is more similar to the bills of *P. finlaysoni* and *P. melanicterus*. The bills of the Dicaeidae vary from relatively short, blunt and laterally flattened to narrow and decurved structures. They are not notched at the tip, and there appear to be no obvious correlations with those of *Paramythia* and *Oreocharis*.

7. NOSTRIL

In the Dicaeidae the nostril is partially covered by an operculum, leaving a transverse slit-like aperture at the lower edge, partially concealed by the operculum. In most of the Pycnonotidae the nostril is also partially covered by an operculum, leaving a transverse narrow aperture at the lower edge, which is usually slightly broader than that of the Dicaeidae and not concealed by the flange-like operculum edge, although in some cases no aperture is visible. Both *Paramythia* and *Oreocharis* have nostrils partially covered by an operculum to leave a narrow transverse opening at the lower edge, the appearance being closer to that of the Pycnonotidae than to the Dicaeidae.

8. TENTH PRIMARY

In the Pycnonotidae the tenth primary varies in length from one half to one third of the length of the longest primary. In the Dicaeidae the tenth primary in species of *Prionochilus* varies from one third to one quarter the length of the longest primary, while in Dicaeum it is usually vestigial. In both *Paramythia* and *Oreocharis* it is vestigial.

9. TONGUE

The tongues of the Dicaeidae are tubular with complex brush tips. The tongues of *Pycnonotus* species examined, *P. barbatus* and *P. luteolus*, were found to be relatively broad and tapering, narrowing to a tiny double tip formed by a slit-like median notch. The dorsal surface was smooth and the ventral surface had a slight groove towards the end, leading to the notch. The tongue of *Paramythia*, described and figured by Mayr and Amadon (1947), is also relatively broad and tapering with a small notch at the tip very similar to that found in the Pycnonotidae. The tongue of *Oreocharis* is unknown.

10. STOMACH

The gizzard of the Dicaeidae consists of a blind diverticulum leading off the proventricular-intestinal junction, and can be closed by a sphincter (Desselberger 1931). The gizzard of *Paramythia* is a typical ridged structure with two muscular pads (Mayr and Amadon 1947). The gizzard of *Pycnonotus barbatus* was examined and showed a similar ridged gizzard with two muscular pads.

11. NEST

The nests of the Pycnonotidae are open cup-shaped structures. Those of the Dicaeidae are pendent, bag-shaped nests of woven and felted material, the top being partly covered and leaving an entrance to one side of the top of the nest. *Paramythia* makes a cup-shaped nest in the twigs of a thick bush (Rand 1942). Parker examined a nest at the American Museum of Natural History which had been collected at Mount Hagen for Dr. E. T. Gilliard (AMNH. 17284) and was presumed to be that of *Oreocharis*. It was a deep cup nest made mainly of moss and lined with hair, and had been built in a fork.

DISCUSSION

The evidence for relating *Paramythia* and *Oreocharis* to either the Pycnonotidae or the Dicaeidae may be summarised as follows. The information on filoplumes, tarsal scutes and rictal bristles shows them to be indeterminate as indications of relationship, while nostril shape is indeterminate but with a slight suggestion of relationship with the Pycnonotidae. The general appearance, plumage pattern and colour, bill shape, type of nest, and in *Paramythia* tongue and stomach, all suggest that the two species may be directly linked with the Pycnonotidae. The specialised flank filoplumes link the two species without revealing further relationships.

The only character that can be clearly set against these is the vestigial tenth primary present in both species and also in the genus Dicaeum, but not in the Pycnonotidae. In view of this it is necessary to consider the implications of the reduction of this feather. It has been shown (Kipp 1942, 1955; Dorst 1962; Meinertzhagen 1951; Stegman 1962) that a long tenth primary is accociated with a relatively short rounded wing, and a short or vestigial tenth primary with a longer and narrower wing, the former wing shape being characteristic of sedentary birds and the latter of species needing sustained or long-distance flight. Stegman (1962) had also shown that the long narrow wing usually evolved from a shorter rounded wing with the accompanying reduction in size of the tenth primary.

A study of the warblers of the genus *Acrocephalus* (Parker and Harrison 1963) revealed that a shorter tenth primary and longer wing was characteristic of migratory species. It was also found that a short tenth primary combined with a shorter, more rounded wing occurred in species of *Acrocephalus* on Pacific islands and it was concluded that these populations had been derived from invasions by longer-winged ancestral forms which under sedentary conditions had re-evolved a more rounded wing, but that the short tenth primary remained unchanged. A similar trend was found in larks of the genus *Alauda* (Harrison, in press). It could therefore be argued that while the relatively sedentary Pycnonotidae species showed the typical rounded wing and longer tenth primary, the presence of a vestigial tenth primary in New Guinea forms might indicate that they had been derived from an earlier invading long-winged form no longer extant, and that the loss of the tenth primary resulted from this phase. This would not invalidate other evidence of relationship nor necessarily imply considerable divergence. In the case of *Acrocephalus* all three wing-types occur in one genus. The vestigial tenth primary in *Dicaeum* might indicate a similar earlier phase or alternatively might be associated with a need for specialised or prolonged flight in these species.

In view of the evidence now available, and in spite of the incompleteness of the available information regarding *Paramythia* and *Oreocharis*, it is very difficult to uphold the suggested relationship between these species and the Dicaeidae, or to deny the apparent affinities with the Pycnonotidae. Some of the resemblances to the latter family might be accidental, due to the presence of generalised rather than specialised conditions in both taxa. The relatively simple tongue structure might be such an example. Even when this is taken into account it would be more satisfactory, on present evidence, to remove the two genera *Paramythia* and *Oreocharis* from the Dicaeidae, and to regard them as a part of the Pycnonotidae. They appear to constitute a specialised isolate group, having certain characters suggesting that they are more closely related to one another than to the other genera of Pycnonotidae.

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Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Mr. John Yealland, The Zoological Society of London, Regent's Park, London, N.W.1. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

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DINNERS AND MEETINGS FOR 1966

18th January, 15th February, 15th March, 19th April, 17th May, 20th September, 18th October, 15th November and 20th December.

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The six hundred and thirty-first meeting of the Club was held at the "Clarence", Dover Street, London on the 18th January, 1966.

Chairman: Mr. R. S. R. Fitter

Members present: 21; guests 8.

The speakers were Mrs. B. P. Hall and Mr. Derek Goodwin, and Mrs. Hall has kindly supplied the following report on their illustrated talk:—

Some birds of central Australia

Mrs. Hall gave a short account of the 3rd Harold Hall Australian Expedition which spent six months in 1965 collecting birds for the British Museum, mainly in the central districts of South and Western Australia. In comparison with similar semi-desert areas in southern Africa the birds had been much scarcer; and surprisingly few were ground birds or adapted exclusively to arid conditions. It suggested that either semi-desert conditions were comparatively new to Australia, or that the continent as a whole had so few species for its area that there were plenty of vacant niches—the success of introduced mammals, even in the most arid parts, argued that there was sufficient food in these areas to support more vertebrates.

Mr. Goodwin spoke on behavioural aspects of some Australian birds. Many species seem able to do without water; this includes some, like the quail thrushes and whitefaces, that feed largely on seed. The Plumed Pigeon shows remarkable convergent resemblance to partridges. The crepuscular drinking habits of the Common Bronzewing Pigeon and Bourke's Parrakeet presumably evolved as a result of intense and long-continued predation by birds of prey at watering places. Some of the Meliphagidae show apparently pointless aggression towards other species.

Further breeding records from Zambia (formerly Northern Rhodesia) (No. 5)

by C. W. Benson and Charles R. S. Pitman

Received 29th October, 1965

Benson having left Zambia permanently, this is the final instalment in this series (for No. 4, see *Bull. Brit. Orn. Cl.*, 1964: 54–60). The data are arranged in the same manner as previously. Many of the records were obtained by C. J. Vernon while on an expedition with Benson to the Zambian section of the Nyika Plateau during the first twelve days of 1964. Some of the results have already been published in *Bull. Brit. Orn. Cl.*, 1964: 124–132. We are also especially grateful to R. K. Brooke for information on particular points; to M. P. Stuart Irwin for notes on various specimens, and to A. J. Tree for many sight records. Any eggs mentioned as collected are in the British Museum, and birds in the National Museum of Zambia, Livingstone, unless otherwise specified. References to clutch-size in Benson *et al.* (1964) are for Rhodesia. As explained on page 32 therein, such data for Zambia and Malawi are not included. The following are co-ordinates for localities not on the map or in the gazetteer in Benson and White (1957):— Chifuwe, 12° 58′ S., 25° 01′ E.; Cholola, 17° 14′ S., 23° 49′ E.; Chunga, 15° 03′ S., 26° 00′ E.; Lukanga/Kafue confluence, 14° 22′ S., 27° 11′ E.; Moshi, 14° 26′ S., 26° 10′ E.; Mswebi, 14° 24′ S., 27° 02′ E.; Munyumbwe, 16° 39′ S., 27° 47′ E.; Neganega, 15° 45′ S., 28° 02′ E.; North Kafue Basin, 12° 18′ to 14° 24′ S., 27° 00′ to 28° 50′ E.; Ntemwa, 14° 25′ S., 26° 03′ E.; Sinjembele, 17° 16′ S., 23° 03′ E.

Nycticorax leuconotus (Wagler)

C. S. Holliday saw a nest containing two eggs near Livingstone, in a tree overhanging the Zambezi River, four feet above water level, in late October, 1957. J. M. Feely saw three fledged young, in a generally brownish plumage, with both their parents, all perched together in a *Salix* tree overhanging the Luangwa River at 12° 54′ S., 20th June, 1964. The only previous Zambian breeding record is that by Benson & Pitman (*Ool. Rec.*, 1956: 9).

Anas capensis Gmelin

Coll. by hand two ducklings, still completely in down, about two weeks old, Liuwa Plain, 25th July, 1964 (Benson). They were on the edge of a shallow, drying up saline pan, in the middle of this large plain described by Traylor (*Ibis*, 1965: 137). Both parents were in attendance, and there were only these two young in the brood. One of them is in the National Museum, Bulawayo, and both Irwin and E. A. Zaloumis (the latter has kept many young Anatidae in captivity) agree with the estimate of its age. On the pan itself there was another brood of ten young of similar size to the first two. There was also a flock of thirteen birds, all apparently adult.

Benson & White (1957) give but few records of the occurrence of this species in Zambia, and an earlier breeding record which they quote from Barotseland is dubious. Benson (*Ostrich*, suppl. 3, 1959: 9; *Occ. Papers Nat. Mus. S. Rhod.*, 24B, 1960: 344) gives records of small numbers on Lochinvar Ranch in July and November, and has seen it on the following further occasions there:— pair, 13th November, 1962; two pairs (in the case of one, the birds chasing each other, as if courting), 7th May, 1963; pair, 16th August, 1963. He also saw three at a pan on the Matabele Plain, south-western Barotseland, 19th July, 1964 and one there nine days later. The species seems to be largely confined in Zambia to the relatively dry south-western part, and its discontinuous distribution has already been commented on by Benson & White (*Proc. 1st Fed. Sci. Congr.*, Salisbury, 1960: 211).

Porphyrio alleni Thompson

P. J. Wright found a nest containing a single egg at Chunga, 11th February, 1963. Three days later there was a full clutch of C/4, the nest still holding C/4 on 2nd March. The eggs, which were not collected, measured 36 x 25, 38 x 25, 35 x 25, 36 x 25 mm. The parents were clearly seen at the nest, and identified for certain by the patch of bare blue skin on the forehead. The nest was a deep cup, into which the immediately surrounding grass had been woven, on the edge of a pool in inundated grassland, 50 feet from the bank of the River Kafue. Tree saw two adults, one of which was caught and ringed, accompanied by a fully grown young bird at Mswebi, 30th January, 1965. The same day, at the Lukanga/Kafue confluence, he saw two adults accompanied by three fully grown young. He has seen such young on seven other occasions in the North Kafue Basin, in February and March. For the only previous Zambian breeding records, see Benson & White (1957), that from near Mumbwa being amplified somewhat by Benson & Pitman (*Bull. Brit. Orn. Cl.*, 1959: 16).

Benson & Irwin (*Puku*, 3: 46–50), considering southern Africa as a whole, show that *Gallinula angulata* Sundevall is essentially only a breeding visitor, present in the rains from about December to April, inhabiting temporarily inundated grasslands. *P. alleni* is more an inhabitant of permanent swamps, and might therefore be expected to be resident. However, the following data are in keeping with it being migratory:— (a) Irwin reports that all nineteen specimens in the National Museum, Bulawayo, from Zambia, Malawi, Rhodesia and Bechuanaland, were collected during December/April; (b) In the North Kafue Basin during 1963/65, Tree has seen one or more individuals on twenty-two separate occasions, all records falling between 19th December and 13th April, likewise in Zambia generally Benson on twenty occasions between 30th December and 26th April; (c) Benson (*Ibis*, 1947: 565; 1951: 82), gives two records from Malawi for December of birds out of their normal habitat. But the following data suggest that it cannot be more than a partial migrant, or perhaps more likely merely with quite local movements:— (a) Dr James Bond reports that the date of one of the two specimens recorded by de Schauensee (1951) is 21st October (the other 9th April); (b) Benson saw one on Chisenga Island on 21st September, 1953, another there on 2nd October, 1960; (c) in Malawi, Paget-Wilkes (*Ibis*, 1928: 728) found eggs in September and November (these records were inadvertently omitted in Benson *et al.*, 1964), and Benson & Benson (*Ann. Trans. Mus.*, 21(2), 1949: 163) and Benson (*Ibis*, 1942: 208) give records of birds for July and August; (d) in the southern Congo, Verheyen (1953) collected six specimens in August.

Porphyrio porphyrio madagascariensis (Latham)

The egg-laying data in Benson *et al.* (1964) for Rhodesia, Zambia and Malawi show a considerable spread through the year, from January to October, and in addition Brooke tells us that there is a C/2 fresh and a C/4 set collected by J. A. Cottrell at Mongu on 10th April, 1935, in the Queen Victoria Museum, Salisbury. It is unlikely that this swamp-dweller has any movements at all. Neave (*Ibis*, 1910: 89) collected a specimen at Lake Young on 1st November; Brelsford (*Ibis*, 1947: 68) noted it in

Bangweulu in November/December; Benson (*Occ. Papers Nat. Mus. S. Rhod.*, 21B, 1956: 6) gives records for various months; M. A. Traylor tells us that there is a specimen in the Chicago Natural History Museum collected by E. L. Button on 25th October; Tree saw one near Kitwe on 5th September and there are specimens from Barotseland in the National Museum, Bulawayo, collected in August and September. In the southern Congo, Ruwet (*Rev. Zool. Bot. Afr.*, 69(1–2), 1964: 22) found it to be resident at Lake Lufira, and Verheyen (1953) collected five specimens in November/December.

Clamator jacobinus serratus (Sparrman)

Coll. one egg, with a C/1 of *Pycnonotus barbatus layardi* Gurney, both fresh, Livingstone, 6th December, 1964 (R. C. Hart). The parasitic egg is white and glossy, and measures 24.8 x 21.7 mm. A white, rather than a blue egg is to be expected in this locality, judging from figure 4 in Friedmann (1964), though (p. 52) he records a blue egg from Bulaya, north-eastern Zambia. A young bird with wing 71, tail 33 mm. only, was collected 14 miles west of Livingstone, 5th March, 1964, but the foster-parent was not identified.

White & Winterbottom (*Check list bds. N. Rhod.*, 1949) give four records of the occurrence of this species as early as October, and Brelsford (*Ibis*, 1947: 71) gives one for 3rd October. At Kaputa, in the Mweru Marsh, Benson heard one calling at night on 13th October, and saw two as late as 18th May, both records being in 1956. Brooke (in MS for *Puku*, 4) records it from the Kafue National Park for as early as 15th October. Tree has twenty-two sight-records (of one to three individuals) between October, 1959 and March, 1965, his earliest seasonal dates being 20th and 23rd October, 1959 and 24th October, 1960, all from eastern Lusaka District; his latest 9th April, 1962, from Feira. He saw a lone black phase individual in the Mpika District on 20th February, 1960; another such between Samfya and Fort Rosebery, 31st March, 1964. For the only other Zambian record of this phase (specimen from Livingstone, 19th October), see Friedmann (1964: 86) and Benson (*Occ. Papers Nat. Mus. S. Rhod.*, 24B, 1960: 345), the latter noting that it was fat, and might still have been on migration. Irwin reports that there are now sixteen specimens of this species in the National Museum, Bulawayo, the earliest being 19th October (the Livingstone specimen cited above) and 27th October (from Bulaya), the latest 27th March. There are also fifty-seven Rhodesian specimens, the earliest 1st November, the latest 24th April. The black phase specimen from Malawi mentioned by Friedmann (1964: 86) is from Port Herald, and is dated 19th March, 1956.

Clamator levaillantii (Swainson)

Coll. fledged young bird, Cholola, 19th March, 1964, under the parental care of a *Turdoides jardinei tamalakanei* de Schauensee (Benson). W. F. Bruce-Miller observed another such fledgling being fed by a pair of *Turdoides leucopygia hartlaubii* (Bocage) in his garden near Choma, 20th January, 1963. The cuckoo imitated the babblers' calls very well, as well as giving a few of its own calls.

Friedmann (1964: 87), in discussing the movements of this species, gives the earliest spring date for Northern Rhodesia as 8th November, the latest autumn date as 4th May, this information apparently being derived from Brelsford (*Ostrich*, 13, 1942: 40). White (*Ibis*, 1945: 322) gives scattered records from Mwinilunga between September and February and in May. Brelsford (*Ibis*, 1947: 71) heard one in the Bangweulu area on 3rd October. De Schauensee (1951) records a specimen for 7th October. Benson saw one at Chunga on 11th September, 1959, another near Fort Rosebery, 22nd September, 1960. Tree has nine sight-records from the same period as for his records of *C. jacobinus*, his earliest being 24th October, 1963, from Lochinvar, his latest 10th April, from Abercorn, though Vernon saw one at Solwezi as late as 2nd May, 1964, and Pitman (*Faunal Survey N. Rhod.*, 1934: 210) one at Kasama even on 9th May. Irwin reports that there are thirty-five specimens in the National Museum, Bulawayo, the earliest being 24th September (from Kabompo), 26th and 30th October (both Serenje District), the latest 6th May (two specimens, Chilanga and Munyumbwe). There are also twenty-four Rhodesian specimens, the earliest being 10th, 22nd, 25th and 29th October, the latest 15th, 25th and 27th May, and 6th June.

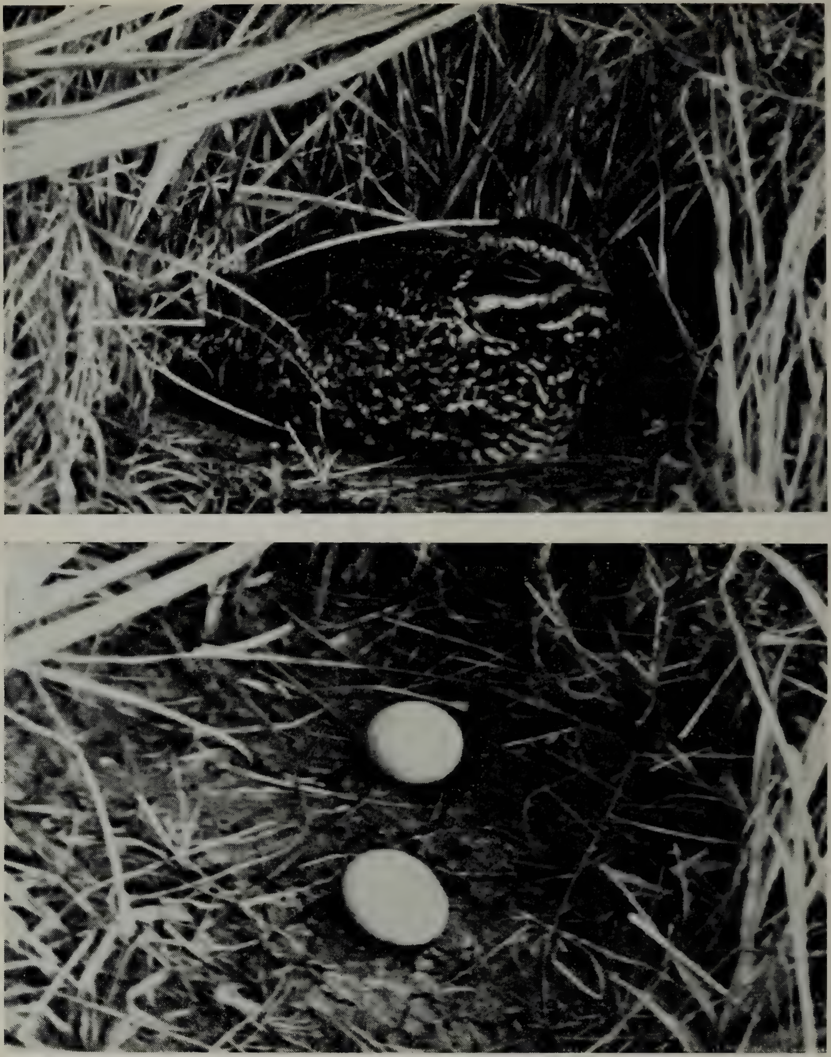
Bubo lacteus (Temminck)

On 26th July, 1964, on Lochinvar Ranch, J. M. E. Took examined a single egg in the flattened down top (so as to form a well marked cup) of an old nest of a Hammerkop (*Scopus umbretta bannermani* C. Grant), in an *Acacia albida* tree, on a horizontal branch, 14 feet from the main trunk, 20 feet above the ground. One of the parents was flushed from the nest, and its mate was nearby in a *Euphorbia* tree. The egg appeared to be very fresh. McLachlan & Liversidge (*Bds. S. Afr.*, 1957) state that the egg is "rough and pitted", but Took noted that this egg was neither, being of the texture of that of *Strix aluco* Linnaeus, for example. Pitman has handled a few of this owl's eggs, none of which has been "rough and pitted". H. W. James informs us that there are two clutches collected by Cottrell in the Queen Victoria Museum, Salisbury, as follows:— C/1 fresh, Neganega, 9th July, 1939; C/1 set, Mazabuka, 4th July, 1941. Measurements are 65.8 x 53.6 and 60.1 x 48.7 mm. Both were from old nests of *Aquila rapax rapax* (Temminck) in vlei *Acacia* trees. For the only two previous Zambian breeding records, see Benson (*Black Lechwe*, 2(5), 1960: 157).

Caprimulgus natalensis mpasa Smithers

Coll. C/2, Moshi, from *Echinochloa* grassland on edge of airstrip, 24th September, 1963 (Wright). The accompanying photographs show the parent and the eggs. The eggs, although originally found nine days previously, were still relatively fresh when collected. They measure 27.3 x 21.5, 29.1 x 21.6 mm., and are distinctive, smooth with slight gloss, whitish or ivory, one with a faint pinkish tinge; markings indistinct, irregular grey spots on shorter egg, and a few specks of light burnt umber very sparingly on underlying faint dull violet spots all over on the longer. Following Hall (*Bull. Brit. Mus.* (*Nat. Hist.*), 6(7), 1960: 411), the subspecies may be *mpasa*.

Lynes (*Rev. Zool. Bot. Afr.*, 31(1), 1938: 111) collected a C/2 nearly fresh at Sandoa, in the southern Congo, 9th September.



The incubating *Caprimulgus natalensis* and the eggs.
Photographs by P. J. Wright

Indicator indicator (Sparrman)

Coll. one egg with a C/3 of *Ceyx picta natalensis* (Smith), all four eggs fresh, Livingstone, 21st October, 1963 (D. Swanepoel). The eggs were in the usual nesting site for *C. picta*, *i.e.* at the end of a horizontal tunnel. This had been excavated into the side of a pit, in *Baikiaea* woodland. The eggs of *C. picta* are white, rounded, glossy and nest-stained, and measure 18.3 x 15.3, 18.0 x 15.0, 18.2 x 15.1 mm.; the other, which is attributed to *I. indicator* (the similarly sized *I. variegatus* Lesson is unknown in the

Southern Province or Barotseland), is similar but not so glossy, and measures 22.5 x 18.1 mm. Friedmann (*Bull. U.S. Nat. Mus.*, 208, 1955; *Proc. U.S. Nat. Mus.*, 108 (3404), 1958) gives no record of *C. picta* being parasitised by any species of honeyguide.

Phyllastrephus flavostriatus alfredi (Shelley)

Coll. C/2 fresh, Nyika Plateau *ca.* 6,400 feet, 5th January, 1964 (Benson). Eggs ovate, smooth, with slight gloss; pale brownish-flesh with rich pinkish suffusion, two-thirds up the eggs a very narrow girdle of blackish-brown scribblings and scrawls on underlying medium dark grey; size 23.9 x 16.1, 23.7 x 16.2 mm. The nest was a shallow cup, decorated with dead fallen leaves on the outside, and slung in the small outer branches of a sapling, about four feet above the ground. For previous breeding records from the Nyika Plateau as a whole, see Benson (1951: 93; *Bull. Brit. Orn. Cl.*, 1952: 81)

Platysteira peltata mentalis Bocage

At Moshi, 8th August, 1963, Wright watched a pair building a nest 20 feet up in a thicket on a termite mound. In the same locality and type of habitat, 1st November, 1964, he found another nest 20 feet up, containing a single young bird only just hatched, still quite naked, being fed by both parents.

Cossypha caffra iolaema Reichenow

Coll. C/2 about two-thirds incubated, Nyika Plateau *ca.* 6,500 feet, 5th January, 1964 (Vernon). Eggs typical and bluntly oblate; smooth with slight gloss; indistinct, very pale bluish-green ground, with general creamy appearance from the profuse, tiny, very pale buffy-brown markings all over, on underlying, barely perceptible pale lilac-grey; size 23.4 x 16.1, 22.4 x 16.3 mm. This and another nest nearby, also containing C/2, were bulky cups of the needles of an introduced *Pinus*, dry plant stems and leaves, lined inside with fine wiry materials, placed against the trunks of *Pinus* trees in a windbreak, some six feet above the ground. Five other empty nests were found by Vernon in the vicinity. He also found the following further nests on the same visit to the Nyika:— 4th January, one containing three young about four days old; 6th January, one with C/2, one egg of which had hatched the following day; 11th January, one with two young, to leave the nest within a couple of days. Also, G. S. Keith noted a nest with C/2 on the Nyika, 26th December, 1964. With the possible exception of the second C/2 for 5th January, all the records of occupied nests point to egg-laying in December. All of the twenty-two records for Rhodesia and Malawi in Benson *et al.* (1964) are for September/December, with a peak apparent in November.

Chloropeta similis (Richmond)

Coll. C/2 fresh with female parent, without any further egg to lay, Nyika Plateau *ca.* 6,700 feet, 9th January, 1964 (Vernon). Eggs ovate, rather rounded, somewhat elliptical, smooth and dull surfaced; light pinkish with a few discrete tawny spots and specks, mainly around or on large end, on underlying very scanty, almost imperceptible grey; size 18.1 x 14.2, 17.9 x 13.9 mm. Two days previously there was only one egg, and on 2nd January the nest was still being built. It was a bulky cup of dry grass, lined with very fine materials, and near the top of a 7-foot high

Philippia bush on the edge of rank secondary bush growth by a stream. Another nest found by Vernon on 11th January was built in between four upright stems of a herb, four feet up, among low plants and bushes on a mound beside a stream. It contained one young with feather-tracts just starting.

Differences in the behaviour and ecology of this species and *C. natalensis* Smith, which occur alongside each other on the Nyika, are being discussed by Keith and Vernon in a separate paper.

Apalis thoracica youngi Kinnear

Coll. C/2, Nyika Plateau *ca.* 6,500 feet, 3rd January, 1964 (Vernon). This clutch is not available, but Vernon noted that one egg was heavily incubated, the other infertile. The nest was a dome made of mosses, lichen and fibrous materials, lined with very fine grass, in a *Philippia* bush among bracken growth on the edge of a stream. For breeding records of *youngi* from Malawi, see Benson & Benson (*Ann. Trans. Mus.*, 21(2), (1949: 171) and Benson (1951: 99).

According to O. P. M. Prozesky, there is a C/2 in the Transvaal Museum collected by R. E. Shannon in the Mkushi District (west of the Luangwa Valley) in January, 1944, while Brooke tells us that there is another C/2 collected by Shannon in this district, on 10th January, 1943, in the Queen Victoria Museum, Salisbury. On distributional grounds there is no reason to doubt these records, since Benson & White (1957) record the species from between Serenje and Danger Hill, and Keith and Vernon saw it on the Mkushi River at 13° 33′ S., 29° 41′ E., 3rd and 18th December, 1964. The subspecies in this area west of the Luangwa Valley is *A. t. whitei* Grant & Mackworth-Praed.

Bradypterus cinnamomeus nyassae Shelley

Coll. C/2 hard set, Nyika Plateau *ca.* 6,700 feet, 8th January, 1964 (Vernon). Eggs rather rounded, smooth and dull surfaced; pale pinkish-cream, thickly and finely peppered all over pale fuscous on underlying pale grey, with heavy concentrations of both markings at top of large end; size 20.7 x 16.3, 19.9 x 16.3 mm. Nest a bulky deep cup of dry grass and leaves, lined with fine grass stems, in the side of a rank tuft of grass in thick growth on the edge of a stream, flowing through boggy ground away from a patch of evergreen forest, some 150 yards away. Although neither parent was collected, it is reasonable to attribute these eggs to *B. cinnamomeus*, not the very similarly coloured *B. mariae* Madarasz, four specimens of which were collected on the same visit in the interior of evergreen forest, four of *cinnamomeus* outside. Such an ecological difference in these two species, where they occur together, is also noted by Benson (*Check list bds. Nyasaland*, 1953). Further west in Zambia, however, where *mariae* is unknown, *cinnamomeus* inhabits very largely the forest interior (for generalised localities, see Benson & Irwin, *Arnoldia* (*Rhodesia*), 1(29), 1965).

Cisticola ayresii ayresii Hartlaub

Coll. C/3 fresh, Nyika Plateau *ca.* 7,000 feet, 8th January, 1964 (Vernon). Eggs ovate, somewhat rounded to elliptical, smooth and slightly glossed, pale blue, discretely and sparingly specked and spotted blackish-brown on a very little underlying pale dull purplish-slate, markings mainly in the form of a disconnected girdle around larger end; size 15.1 x 11.9, 14.8 x 11.9, 15.3 x 11.5 mm. Nest in open grassland, a small oval of grass, built into a sparse tuft of grass, the living grass bowered over to hide the nest. Vernon also noted a nest under construction, 7th January.

Cisticola lais semifasciata Reichenow

Coll. C/3 about one-third incubated, Nyika Plateau *ca.* 6,500 feet, 7th January, 1964 (Vernon). Eggs ovate to elliptical, smooth with slight gloss; pale blue, finely, faintly and sparingly specked all over very pale tawny, on almost imperceptible grey, with a tendency to form a girdle on cap at large end; size 16.3 x 12.2, 16.3 x 12.1 mm.; one broken. Vernon also collected a C/3 about three-quarters incubated on 4th January, and noted the two following further nests:— 7th January, two young about one week old; 9th January, three young a few days old. General comparisons between this species and *C. njombe* Lynes have already been made by Vernon (*Bull. Brit. Orn. Cl.*, 1964: 124–128). The eggs of *njombe* are described in detail by Pitman (*ibid.*: 130), and those of *lais* do not seem certainly distinguishable.

Cisticola brachyptera isabellina Reichenow.

Coll. C/1 infertile, with one young almost fully feathered, Nyika Plateau *ca.* 5, 800 feet, 5th January, 1964 (Vernon). Egg ovate, smooth, slightly glossed; light turquoise, sparingly specked all over light fuscous on underlying, scarcely perceptible, very pale lilac-grey; size 15.8 x 11.8 mm. This egg is in fact a small replica of eggs of *C. nigriloris* Shelley described by Pitman (*Bull. Brit. Orn. Cl.*, 1964: 131). Nest a small ball of dry grass, lined throughout with plugged down, placed five inches up in a small plant in grassland dotted with *Protea* bushes.

Vernon also recorded a nest containing C/2 on 12th December, 1964, at Mporokoso, where the subspecies is *C. b. loanda* Lynes.

Hirundo atrocaerulea Sundevall.

Vernon noted a nest containing C/3, another containing a single young bird, on the Nyika Plateau, 10th January, 1964. They were cups made of mud-pellets, lined with fine grass and feathers, rather shallow and frail, and placed against banks, under slight overhangs along a stream through an open bog. Four other unoccupied nests were seen on the same stream. Probably the season was already almost finished, see data for Rhodesia and Malawi in Benson *et al.* (1964).

Irwin has commented on four specimens from the Nyika, whose particulars and measurements in mm. are:—

			Outer rectrices	
Sex	Date	Wing	outermost pair	next pair
♂	31st December	116	172	56
♂	1st January	113	144	52
♂	7th January	111	50	45
♀	11th January	107	65	46

The first two specimens are adult. The third is a juvenile. On the upper side it is indistinguishable from the two adults, but on the under side is considerably less metallic blue, with an admixture of sooty black. The fourth, which is still younger, differs from the adults in having the metallic sheen on the crown and mantle much duller, while below it is an earthy brown on the throat and chest, sooty black on the abdomen, with only the faintest trace of metallic blue sheen. Excepting the length of the outer rectrices, it probably does not take very long for the juvenile to assume a plumage similar to that of the adult.

Lanius souzae souzae Bocage

Coll. C/2 fresh with female parent, Chifuwe, 5th October, 1963 (Jali Makawa p.p. Benson). Eggs ovate, smooth, dull surfaced; off-white, very finely specked and peppered, mainly rather sparingly all over, pale buffy-brown on underlying pale lilac-grey, with broad girdle around larger end; size 20.1 x 16.2, 20.3 x 16.1 mm. Took noted a nest containing C/3 near Lusaka, 27th September, 1964. The eggs were pale green-grey, freckled, more heavily around the thick end, with grey. Took noted that they were not blotched, and not at all shrike-like. He also found a nest containing three young about five days old near Lusaka, 8th December, 1964, and Mrs. M. Aspinall saw two fledged young there, 27th October, 1963, well able to fly, but being fed continually by their parents, who were flying down to ground level to hawk insects.

Judging also from twelve earlier records in Benson *et al.* (1964), it seems that egg-laying occurs essentially in the hot pre-rains. However, there is one record which has been overlooked, from Malawi, of a female in breeding condition collected near a half-built nest at Nyambadwe, near Blantyre, as late as 18th December (Belcher, *Ool. Rec.*, 2(2), 1922: 41). Clutch-size seems seldom to be as large as four, the information from eight of these twelve records being as follows:— eggs 3, 3, 4; nestlings 3, 3, 3; fledglings 2, 2. The four other records are derived from oviduct or ovary examination, or the number was not recorded. The C/4 is from Benson (*Ibis*, 1942: 321), and has been confirmed from his original notes. Vincent (*Ibis*, 1949: 128) gives the clutch-size as two or three, more often three, at Elisabethville, in the Katanga. He gives measurements of thirteen eggs, so must have had at least five clutches.

The most usual clutch-size for *L. collaris* Linnaeus in Rhodesia is four (Benson *et al.*, 1964), and it might be supposed that this species has a larger clutch-size than has *souzae*, unknown south of the Zambezi Valley. However, only three records for *collaris* of as large as four are available from Zambia and Malawi, as follows:— Lodjwa, 21st October (Benson, *Ibis*, 1942: 320); Broken Hill, 16th October, 1932 (Pitman); Kasama, 4th December, 1958 (Vernon). Vincent (*Ibis*, 1949: 126) found that at Elisabethville the full clutch was in every case three.

Tchagra minuta anchietae (Bocage)

Benson found a nest on the Nyika Plateau *ca.* 6,300 feet (higher than which it is probably absent), 11th January, 1964, containing a single young bird still almost naked. The nest was an open cup, three feet above the ground, in rank grass growth by a stream. Excellent views were obtained of both parents. Vernon found a nest at Ngitwa, between Kasama and Mporokoso, 13th December, 1964, three feet up in a sapling, in rank grass on the edge of a dambo. It contained two young about one week old. Benson & White (1957) give a record of egg-laying at Ndola in December, and this is the only previous Zambian breeding record, though Vincent

(*Ibis*, 1949: 135) gives records indicating egg-laying at Elisabethville in January and February.

Parus leucomelas insignis Cabanis

Coll. C/2 fresh, Solwezi, 2nd October, 1963 (Jali Makawa p.p. Benson). Eggs ovate and rounded, smooth without gloss; white, boldly freckled all over chestnut on underlying shades of grey, with medium concentrations at top of large end; size 19.3 x 14.4, 19.1 x 14.3 mm. Brooke saw a fledged juvenile begging food from an adult at Ntemwa, 26th October, 1962. Vernon saw a party of five at Mporokoso, 12th December, 1964, of which at least one was a juvenile, begging and receiving food. He also noted a C/3 at Bulaya, 11th December, 1964, in the hollow dead trunk of a small tree, only one foot above the ground. R. I. G. Attwell found young in his garden at Chilanga on 10th December, 1961. They left their nesting hole on 5th January, the fledging period thus being no less than about twenty-six days. *P. niger* is also known at Chilanga, but Attwell satisfied himself from comparison with preserved specimens of both species that his birds were *leucomelas*. A record from L. Trollope of C/4 which hatched on 7th or 8th October, 1961, and from T. R. H. Owen of nest-building on 12th/14th September, 1963, a parent tightly incubating ten days later, both records from near Ntemwa, in the Kafue National Park, are presumably also both referable to *leucomelas*, since Brooke, in a list of the birds of the Park (MS for *Puku*, 4), does not record *niger* further up the Kafue River than about 14° 50′S.

Lamprotornis australis australis (Smith)

Benson found a nesting hole at Sinjembele, in old cultivation, 3rd April, 1964. It contained two young still almost naked, about four days old. They had the interior of the mouth dull yellow, the outside of the bill white, with a well marked gape-flange. Their stomachs were full of grasshoppers, and each also contained some five fruit-seeds of diameter about 5 mm. The entrance to the nesting hole was 15 feet up a dead *Acacia giraffae* tree, the hole going down about 2½ feet.

Mackworth-Praed & Grant (*Bds. s. third Afr.*, 2, 1963) record breeding in the Transvaal in November and in South-West Africa in March. The only original references traced are from Roberts (*Journ. S. Afr. Orn. Union*, 9(1), 1913: 31) (fresh egg at Platriver, 18th November) and Hoesch & Niethammer (*Journ. Ornith.*, suppl., 1940: 309) (two nests with eggs at Okahandja, March). Like *L. mevesii* (Wahlberg) (see Brooke, *Bull. Brit. Orn. Cl.*, 1965, 85, p. 139), it may be a rains breeder, even though at Sinjembele in this particular season there had been no rain in February and less than one inch in March.

Nectarinia famosa cupreonitens Shelley

Coll. C/2 fresh, summit ridge of Mafinga Mts. *ca.* 6,800 feet, 24th June, 1958 (I. R. Grimwood). These eggs were mislaid shortly after their collecting, and have only recently been traced. Neither parent was seen at the nest, which was in an exposed position on the edge of a clump of bracken-briar growth. It was also collected, and sent to J. G. Williams, who found that it agreed exactly with Kenya-taken nests of this species, C/2 also indicating *famosa* (males of which in full green dress were collected by Grimwood on the same day in the vicinity) rather than *kilimensis*, the only likely alternative in this locality, but for which C/1 is normal (see below). The eggs are ovate, slightly elongate, smooth with slight gloss; dark buffy-brown on whitish ground, marked profusely and rather streakily all over, on underlying shades of grey; also thickly all over; size 17.6 x 12.3, 16.6 x 12.0 mm. They are typical of *famosa*, and quite distinct from the egg of *kilimensis*, which is also larger (Benson, 1951: 110). There may be quite local variations in the breeding season of *famosa*, the season on the Mafinga Mts. perhaps being similar to that on the Vipya Plateau, Malawi, see also Benson (*Bull. Brit. Orn. Cl.*, 1952: 83). On the Nyika, Keith collected three males in full green dress on 26th/30th December, 1964. This problem needs further investigation. Any variation definitely established might be connected with the flowering of particular plants.

Nectarinia kilimensis arturi P. L. Sclater

Vernon found a nest on the Nyika Plateau *ca.* 6,500 feet on 4th January, 1964. It was made of soft plant seed-heads and a little grass, and was conspicuously placed five feet above the ground in rank growth on the edge of evergreen forest. It contained a single young bird, with feather-quills just starting to appear on the wings, spine and flanks, its eyes still closed. This record presumably indicates C/1, as is normal in the nominate race, and there is nothing to indicate more than C/1 in the four records from Malawi in Benson (1951: 110; *Bull. Brit. Orn. Cl.*, 1951: 7). Benson also saw a nest containing a single nestling about half-way to fledging at Dedza, Malawi, 8th July, 1951. Of six records from Rhodesia in Benson *et al.* (1964), five are of C/1, only one of C/2. The odd C/2 is to be expected so far south as Rhodesia.

Ploceus baglafecht nyikae (Benson)

Coll. C/1 infertile, Nyika Plateau *ca.* 6,200 feet, 7th January, 1964 (Vernon). Egg ovate and elongate, smooth but with little gloss; green, boldly spotted with brown; size 24.3 x 14.8 mm. The nest was a kidney-shaped structure of dry grass, lined with soft seed-heads, 12 feet above the ground, built into the outer branch of an *Erythrina* tree. It also contained a young bird about two days old. A fledged juvenile flew out of a nest in an adjacent tree when it was shaken. Benson saw another occupied lone nest on 12th January as low as 6,000 feet. It was in an isolated tree on the edge of a stream, 12 feet above the ground and inaccessible. Males collected on 1st and 10th January had testes measuring respectively 3 x 2, 6 x 4; 5 x 3, 6 x 4 mm. This is the first breeding information for this subspecies, which is only known from the Nyika.

Amblyospiza albifrons maxima Roberts

Coll. C/3 fresh, Katombora, 14th February, 1964, with both parents (Benson). Eggs typical of the species, dull surfaced without gloss; white, with creamy tinge; marked sparingly, and mainly at large end, sometimes smudgily, with burnt umber or Indian red specks and spots, on a very few tiny spots or specks of shades of grey—a few very dark; size 24.6 x 16.3, 22.0 x 16.9, 23.9 x 16.3 mm. The eggs of this subspecies do not appear to have been previously collected. Wing-measurements of the two parents, and of specimens from Barotseland to as far north as Mongu, including material in the National Museum, Bulawayo and the British Museum, are:— six males 99, 100, 101, 103, 106, 107 mm.; one female 95 mm. For measurements of material of *maxima* from the Caprivi Strip, see Benson

(*Occ. Papers Nat. Mus. S. Rhod.*, 23B, 1959: 280). The Barotse specimens include two from as far west as Sinjembele, on the Mashi. A male from 10 miles west of Nangweshi, 30th November, 1963, had testes as large as 8 x 5, 11 x 6 mm., but the nearest suitable aquatic breeding habitat is probably on the Zambezi, at Nangweshi itself.

Tree found a nest containing two young about one week old at the Lukanga/Kafue confluence, 17th February, 1965. For other breeding records from Kafue drainage where, following White (*Revised check list Afr. flycatchers etc.*, 1963: 123), the subspecies is perhaps best regarded as *A. a. albifrons* (Vigors)), see Benson (*loc. cit. supra*) and Benson & Pitman (*Bull. Brit. Orn. Cl.*, 1964: 59).

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Notes on *Icterus chrysocephalus* and *Icterus cayanensis* in Surinam

by F. Haverschmidt

Received 17th August, 1965

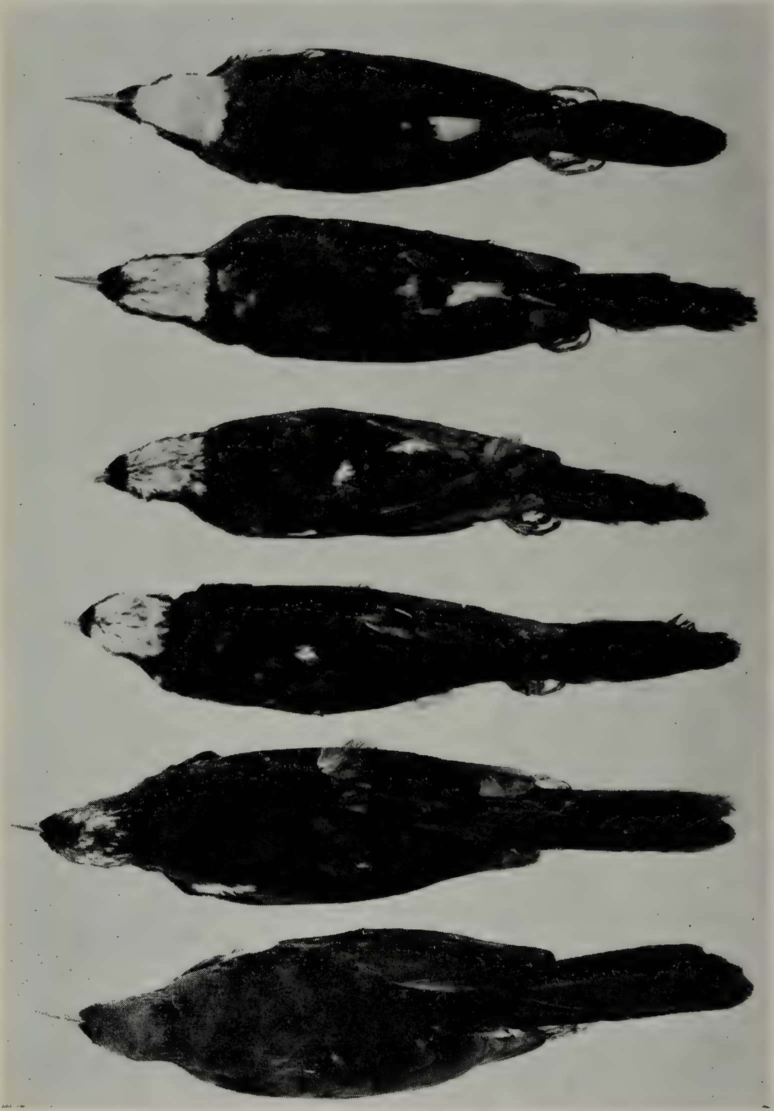
In Surinam the distribution of two closely related species of oriole *Icterus chrysocephalus* and *Icterus cayanensis* overlaps.

According to Hellmayr (1937) *I. chrysocephalus* is the more northern bird which inhabits Colombia, the Orinoco Valley in Venezuela, eastern Ecuador, eastern Peru (Ucayali Valley), the Guianas and extreme northern Brazil (upper stretches of the Rio Branco and the Rio Negro). No subspecies have been described.

Icterus cayanensis is a more southern bird and several subspecies are recognised. The nominate race overlaps with *I. chrysocephalus* in the Amazon Valley (it is, however, not clear whether both species inhabit the same localities), in French Guiana and in Surinam, in eastern Peru and apparently also, according to Chubb (1921) in British Guiana. Both species are mainly black and both have yellow wing-coverts and yellow thighs: the sexes are alike. The difference between them is that *chrysocephalus* also has a yellow crown (the forehead is black), a yellow rump and yellow under tail-coverts which are all black in *cayanensis*. There is some confusion in the description of both species in the hand-books. Sclater (1886) for instance omits to say that *chrysocephalus* has a yellow rump and under tail-coverts and that *cayanensis* has yellow thighs.

Chubb (1921) lists only *chrysocephalus* for British Guiana, but his description is partly incorrect as he states that the female lacks the yellow on the crown, rump and thighs which clearly points to *cayanensis*. As he describes a female obtained in British Guiana we may consider this as proof that *cayanensis* inhabits that country.

In Surinam *I. chrysocephalus* is undoubtedly the commoner of the two, at least in the northern part of the country, where I found it breeding on sandy savannas especially in the neighbourhood of Morice Palm trees (*Mauritia flexuosa*) in March and August (Haverschmidt 1955). I further found that in Surinam specimens which are closely intermediate between



Intermediate specimens between *Icterus chrysocephalus* and *Icterus cayanensis* from Surinam.

Left to right—No. 4875. ♂ Zanderij 3rd September, 1961. No. 7090 ♂ Phedra 2nd January, 1965. No. 7093. ♀ Phedra 2nd January, 1965. No. 7068. ♀ Phedra 27th December, 1964. No. 7092. ♀ Phedra, 2nd January, 1965. No. 6439. ♂ Zanderij 26th December, 1963 specimen of a pure *I. chyrsocaphalus*.

the two species are apparently not common. In my series of 14 specimens there are five which are intermediate:

No. 4875, Zanderij, September 3, 1961. Male with greatly enlarged testes. It is nearly a pure *cayanensis* as the head is wholly black as are the under tail-coverts. A few of the feathers on the rump are tipped with yellow. The thighs are yellow. It was labelled by the late Dr. Junge as *I. cayanensis.*

No. 7090, Phedra (Surinamriver), January 2, 1965. Male with greatly enlarged testes. It has a few yellow feathers mixed in the black crown feathers, a few yellow feathers on the black rump, and the under tail-coverts are black.

No. 7093, Same locality and date. Female, ovary not enlarged. The yellow crown is streaked with black, the rump and under tail-coverts are yellow.

No. 7068. Same locality, collected on December 27, 1964. Female, ovary not enlarged. The crown is yellow streaked with black but to a lesser extent than No. 7093.

No. 7092. Same locality, collected on January 2, 1965. Female, ovary not enlarged. The frontal side of the yellow crown is streaked with black but not the hinderpart.

Another specimen (no. 7091), a male in non-breeding condition from Phedra January 2, 1965 is remarkable in that the black feathers on the abdomen are narrowly tipped with yellow giving it a yellow tinge; otherwise it is a pure *chrysocephalus.*

The status of these intermediate birds is difficult to explain. We could consider them as hybrids as Surinam is part of the region where both species overlap. On the other hand it is certain that *chrysocephalus* is the more numerous of the two. In fact I know of only two pure *I. cayanensis* collected in Surinam. The first one is mentioned by Sclater (1886): it is without locality and date, but was collected by C. Bartlett. This collector stayed for some time in Surinam as a guest on August Kappler's plantation near Albina on the Marowijne River, so I may suggest that it was collected in that region. The second is in the Chicago Natural History Museum and was collected by Harry S. Beatty on 25th November, 1960 near the air strip near Kayser Mountain. It is a female in partial moult and it has a few yellow feathers on the thighs (Emmet Blake *in litt.*) as has the specimen in the British Museum.

Burmeister (1856) who gives a correct description of both species said that *I. cayanensis* usually has yellow thighs. It will be interesting to collect breeding pairs.

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Unilateral feather fragility in a wild Shelduck

by James M. Harrison

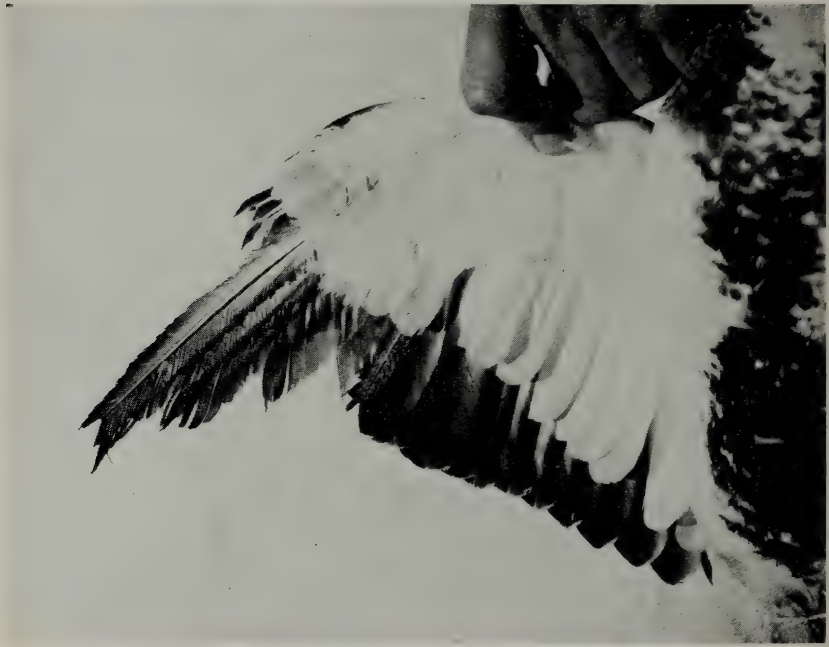
Received 16th July, 1965

On 12th May, 1965, a pair of Shelduck *Tadorna tadorna* (Linnaeus) was collected in North Kent. The duck, which was flying strongly was found to have the first eight primaries of its right wing (fig.) affected by what would appear to be a state of feather fragility. As can be seen the fracture line is irregular.

This condition in this species was first recorded in 1958 (Harrison, J. M., and J. G.) in the remains of a specimen found roughly in the same area. It is believed to be a pathological state and possibly of genetic origin, though at present very little is actually known about it.

It has been met with in various species in widely divergent genera, notably in the Jay, *Garrulus glandarius* (Linnaeus) in which species group it has occurred in the British race *G.g. rufitergum* (Hartert) (1931; 1960) as well as in the Asiatic Black-capped Jay, *G.g. atricapillus* Geoffroy St. Hilaire, in Israel (1960).

It is perhaps not without significance that in this species the writer has also recorded an instance of the condition of "hairy albescence" in an



Right wing of adult duck Shelduck, showing condition of feather fragility.

example of the nominate race from Switzerland (1923). This is a genetically determined condition in which albescence is linked with a defect of feather structure, in which the interlocking mechanism of barbs and barbules is lacking; a similar state has been recorded in the Waterhen, *Gallinula chloropus* (Linnaeus).

The bird fanciers have taken advantage of this plumage abnormality in other genera, and have by selective breeding, produced the so-called "frizzled" varieties of the domestic fowl and canary; in the domestic fowl this variety is referred to as "silky".

As has already been mentioned, the causes of feather fragility are at present unknown, but the cases just mentioned in which alteration in feather structure in association with albescence strongly suggest that the state may in effect be genetic.

Ash (1960), however, in a very exhaustive study has disproved my earlier suggestion in so far as the effects of ectoparasites are concerned.

It may be suggested that the condition could be occasioned by dietary deficiencies. This one can well understand might be the case in birds in captivity, but the writer is very sceptical that this could be operative in wild birds. Ash (*loc. cit.*) indeed gives direct evidence that an unbalanced diet can occasion deterioration of feather development, though this, of course, is not precisely the same condition. That this can occur is of course in no way surprising, and one can call to mind analogous conditions in other vertebrates due to such causes.

Ash comments" The present author had a Carrion Crow in his possession taken at about three weeks old from a brood of apparently perfectly healthy wild birds. This bird had a few *Menacanthus* sp. on it when taken. It was then reared on a diet which was probably extremely unbalanced and contained a great excess of protein. This resulted in the feathers growing very weakly and twisted, and after a few weeks *Menacanthus* swarmed over the whole of the bird, feathers fell out at the slightest touch and the bird remained completely flightless."

The above account describes admirably a state of affairs brought about by a systemic and artificial cause. The generalised nature of this is, of course, in sharp contrast to the localised nature of the condition in the present instance, for this bird was observed by the writer to be flying about strongly and in no way different to any of the other Shelducks seen at the time; it was certainly not suspected of being the subject of this curious condition until handled.

These cases could still conceivably be considered to relate to a systemic cause acting selectively upon the long flight feathers as previous cases have been symmetrical.

Another very curious feature is the fact that the condition has been found in such divergent genera as *Garrulus* and *Tadorna*, and now to add further difficulties to a proper understanding of the condition is the fact that it is now recorded in a wild shot adult female of the Shelduck as a unilateral condition, for the corresponding feathers in the left wing were normal.

What would appear to be the extreme of this condition was recorded in a Mallard, *Anas platyrhynchos platyrhynchos* Linnaeus (Harrison, James and Harrison, Jeffery, 1965). In this bird all the integumentary structures besides the feathers were affected, the scales of the legs and feet were affected, the webs of the paddles were missing, while even the thaeca of the bill was scaling off. Both eyes were affected, one of which had perforated.

At first it was thought that the bird had come into contact with some farm chemical but special tests disproved that this was the case, nor was any internal pathology disclosed.

Conditions such as these are bound to excite interest, and a natural first question is, of course, the cause. Undoubtedly the most popular guess would be diet. However, as diet is assimilable and must therefore be regarded as a systemic agent, it is not easy to accept this as causing a unilateral condition. Not of course that this is unknown for one can think of some of the systemic infections in man which give rise not only at their onset to generalised effects but also, in some cases, to unilateral effects at a later stage, some of which remain as permanent damage. So that one cannot positively assert that all unilateral states are necessarily genetic in origin, and all one can say on this issue is that there are more unilateral conditions that are genetic in origin than symmetrically disposed states.

Some general considerations are forced upon us at this stage, just as they have been in the past in considering parallel conditions in the human.

In man a proneness, or susceptibility to certain diseases has been recognised from as long ago as the last century, possibly even earlier. In medical literature the terms "diathesis", "susceptibility" and "constitution" are constantly recurring, one speaks of a tubercular or gouty diathesis, indicating of course an individual *prone* to such disease.

All these terms and some others are used to indicate a proneness to deviate from the state of "well-being" to that of "ill-being". That is to say that a body is in a state of "well-being" when intrinsically its functional physiology is normal and balanced. If such is not the case then deviations from average normal standards occur. These can be occasioned by intrinsic inadequacies – genetic hereditary defects rendering the subject liable to develop the state of "ill-being", or by *extrinsic agents* such as disease toxins, and other extraneous influences.

Medical literature again uses such terms as "in-born errors of metabolism" (Garrod, 1923) and familiar conditions due to such states are of course gout and diabetes.

These two conditions exemplify the combined actions of the intrinsic and extrinsic factors acting in concert. This state of affairs has been aptly described by Rolleston (1927) as "an unusual personal equation". "Idiosyncrasy" (Garrod, 1931) is also covered by the above definition. Ride (1938) has postulated "a transmissible variation in structure or function (or both, J. M. H.) of tissues rendering them peculiarly liable to react in a certain way to certain extrinsic stimuli". If we reflect upon these cases of feather fragility in the above contexts, what is at the moment quite inexplicable, becomes perhaps a little less obscure.

It is certain that there is no simple answer and that there are in all probability, as indicated above, intrinsic as well as extrinsic influences at work.

That this concept is probable would seem to be supported by the fact that the condition is widespread both geographically and genetically; furthermore I personally cannot accept a theory that wild creatures are incapable of seeking out a dietary suited to their requirements.

If it is accepted then that these cases suffer from some inborn and inherent predisposition, then environmental stresses, *i.e.* the necessity for flight for survival on pinions that are unable to take the stress, can operate to produce the curious condition shown by these birds, thus providing an admirable instance of Ride's dictum quoted above, of an inherited proneness to a state of "ill-being" which can be expressed functionally or morphologically, or in both ways.

Further studies in all such cases are desirable, including, if an opportunity presents, breeding experiments, with a view to seeing whether or not the condition is transmissible. The subjects examined in the flesh by the author have all been in excellent physical condition apart from the abnormality of the flight feathers and in some cases, of the tail feathers. The case of the Mallard recorded above provides an exception and shows that the condition, if genetic, can be morbific or even amount to a lethal state.

Summary

A case of unilateral feather fragility in a wild adult female Shelduck is described. A possible explanation based on the effects of intrinsic and extrinsic factors in combination is advanced.

Acknowledgements

The writer is indebted to Mr. W. Mouland on whose ground the specimen was collected. He would also express his appreciations to Dr. Jeffery Harrison for useful criticisms and advice, and to Dr. Pamela Harrison for the photograph.

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A new species of swallow from Kenya

by J. G. Williams

Received 3rd November, 1965

On 4th April, 1965, a very large concentration of migrating swallows and martins was encountered along the eastern shores of Lake Naivasha, Rift Valley, Kenya. In addition to European breeding swallows the following African species were also present, *Hirundo angolensis*, *Hirundo daurica emini*, *Hirundo abyssinica*, *Hirundo griseopyga*, *Riparia paludicola* and *Riparia cincta* – of which two races were collected, *Riparia cincta suahelica* van Somerern and *Riparia cincta erlangeri* Reichenow. In addition several examples of an unidentified grey-rumped swallow were seen: after some difficulty a single specimen of this bird was collected.

Hirundo andrewi sp. nov.

named in honour of the collector, Mr. Andrew E. Williams.

Type deposited in the British Museum (Natural History).

Type: adult female; skull fully ossified; ovary small; fat; weight 10 grammes.

Locality: Lake Naivasha, Rift Valley, Kenya. Altitude 6,000 feet; 4th April, 1965. Collector Andrew E. Williams.

Description: Crown and nape dark sooty-brown; lores and broad stripe through eye and ear-coverts dark blackish-brown; mantle slightly glossy blue-black; rump and upper tail-coverts brownish-grey; wings blackish; under wing-coverts and axillaries smoky-grey; tail blackish-brown and deeply forked, outer feathers long and attenuated, 25 mm. longer than 2nd longest rectrices; under parts from throat to under tail-coverts uniform smoky-grey with small black patch on each side of chest; bill relatively small and slender. Iris dark brown; bill and feet black. Stomach contents: Diptera.

Measurements: length in flesh 138 mm; exposed culmen 6 mm; width at base lower mandible 5 mm; wing 100 mm; tail 85 mm; tarsus 15 mm. In the field this new swallow somewhat resembles *Hirundo griseopyga* Sundevall, but is of more robust build and is easily distinguished by its smoky-grey under parts.

The fact that a specimen of the Ethiopian breeding race of *Riparia cincta* was collected alongside *Hirundo andrewi* suggests the possibility that the new species may breed in some ornithologically little-known part of Ethiopia. On a subsequent visit to Lake Naivasha, two days later, the migrant concentration had disappeared.

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Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov., sp. nov., subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

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DINNERS AND MEETINGS FOR 1966

15th February, 15th March, 19th April, 17th May, 20th September, 18th October, 15th November and 20th December.

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The six hundred and thirty-second meeting of the Club was held at the Rembrandt Hotel, London, on the 15th February, 1966.

Chairman: Dr. J. F. Monk

Members present 10; guests 3.

Mr. J. A. Hancock spoke on the birds, both native and introduced, of Kauai, Hawaiian Islands, illustrating his talk with coloured slides.

Some of the introduced plants could become a menace to the Drepanidae by spreading and inhibiting regeneration of the endemic food plants and the *Zosterops*, now well established, could become so numerous as seriously to compete for the available food supply.

Plumage pattern and colour relationships of the genera *Carduelis* and *Fringilla*

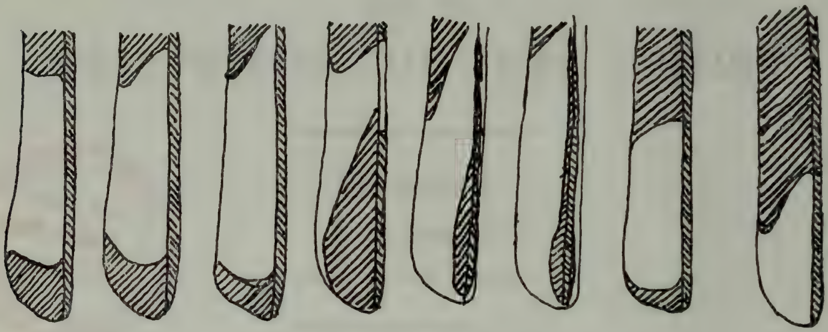
by C. J. O. Harrison

Received 8th October, 1965

Studies of plumage pattern and colour reveal (Harrison 1963a, 1963b) that, although within any group of related species considerable specific differences of pattern and colour may be evolved, nevertheless this variation appears to be confined within certain limits and the patterns reveal the underlying relationship. In the present study the pattern and colour relationships of *Carduelis* (including *Spinus*, *Chloris*, and *Hypacanthis*, after Vaurie 1959) and *Fringilla* are examined. This provides additional evidence of the taxonomic affinities of *Fringilla*.

Tordoff (1954), in a comparative study of the bony palate in seed-eating birds, concluded on this evidence that *Fringilla* was a part of the bunting family Emberizidae, and of different origin from the cardueline finches. The Emberizidae became the Fringillidae, a name previously used for the

Old World finches which were now placed as a subfamily, Carduelinae, in the weaverbird family Ploceidae. This has unfortunately been used without comment in some popular works, as in Austin's work (1961). Mayr, Andrews, and Hinde (1956) showed that Tordoff's conclusions were unsatisfactory on anatomical and ethological grounds. Bock's more comprehensive study (1960) of the palatal processes considered significant by Tordoff showed that these are highly adaptive and are not useful as taxonomic characters; and Zisweiler's study (1965) of the horny palate confirmed the cardueline relationships of *Fringilla*. Plumage pattern and colour offers an additional character for examining this relationship. Only the Palaearctic species of *Carduelis* have been considered.



From left to right, outer tail feathers of:—
Carduelis carduelis neidiecki
„ „ *caniceps*
„ „ *caniceps*
Fringilla coelebs tintillon
„ „ *coelebs*
„ „ *coelebs*
Carduelis carduelis neidiecki
Fringilla coelebs tintillon

THE GENUS *Carduelis*

(a) *Siskin plumage pattern*

Female and immature forms of the Siskin *C. spinus* have a mainly heavily streaked plumage which links them with cardueline finches of other genera. Within *Carduelis* it appears to constitute the earliest plumage pattern, and has largely disappeared but persists as a relict pattern in the immature plumages of most species. The male *C. spinus* shows two main trends apparent in colour and pattern evolution in this group—the trend towards extensive yellow pigment, and the development of increased melanism, more particularly as areas of black plumage on the head.

There is streaking on mantle and rump. The back is olive-green, with yellow on the rump; and the underside greenish-yellow, with white on the belly. The top of the head and the chin are black. The ear-coverts are olive green, and there is a yellow supercilium continuing as a narrow yellow zone bordering the ear-coverts and separating crown, coverts and chin. There is an almost complete wing-bar formed by yellow bases on both webs of the inner primaries and all secondaries, reinforced by yellow tips to the greater secondary coverts. The edges of the inner secondaries are creamy-white, and the outer tail feathers have yellow patches on the inner web towards the base.

(b) *Greenfinch–Goldfinch link*

The Chinese Greenfinch, *C. sinica*, appears to be a central species in that it shows varied basic patterns from which those shown by several other species could have diverged. The female of *C. sinica sinica* is dull brown on the mantle, with a greenish-yellow rump and grey upper tail-coverts; and below the breast is buff-brown with a faint chestnut tint to the flanks, with some individually variable yellow towards mid-breast and mid-belly, and the belly is white. The head is grey, with a touch of green on forehead, supercilium and throat in some individuals. The wing has a broad bar formed by yellow primary and secondary bases, with only a dark line of melanin along the rachis, and the innermost secondaries have broad white edges shading to grey-brown on innermost feathers, while in fresh plumage most flight feathers have greyish-white tips. The outer tail feathers have yellow bases, while the distal half is black.

The eastern race of the Goldfinch *C. carduelis caniceps* resembles to some extent a female of *C. sinica* in which both yellow and brown colour have been reduced. It has a greyish-brown mantle and less grey-brown below, the belly, mid-lower breast, and throat being white, as are rump and upper tail-coverts.

The wing has a similar broad yellow bar on the outer webs of the flight feathers and a concealed white patch on the inner webs; while the white edges of the inner secondaries are restricted to an area at the tip and form a distinct bar on the closed wing. The outer tail feathers have large white patches on the inner webs, and white tips on the central feathers. Most of these differences are only a matter of degree; the one conspicuous difference between this species and females of *C. sinica* being the presence on the grey head of an area of red feathering on forehead, lores and chin.

In the western races of *C. carduelis* the mantle and upper breast are warm brown. Compared with the eastern birds the white on the secondaries and on the outer tail feathers is reduced, and there are small white tips on all flight feathers. The head colouring has evolved still further. In addition to red on forehead, lores and chin, there is black on the crown and also extending down posteriorly on either side of the nape in a narrow crescent, with a zone of white on the side of the head between red and black.

(c) *Greenfinch–Siskin complex*

The female of *C. sinica sinica* is described above. The male has a brown back, yellow rump, and grey upper tail-coverts; while breast and flanks are brown, tinted with chestnut-red, and heavily suffused with yellow. Mid-breast and belly are yellow. It is grey on crown, ear-coverts and nape, and yellowish-green on forehead, supercilium and throat. Wings and tail are like those of the female.

In Japan there are two rather similar races, the smaller darker *C. s. minor* and larger paler *C. s. kawarahiba*. In the former race the female is much browner than that of the nominate race, rump and flanks as well as breast being mainly brown and the head having a brownish wash. The brown of breast and flanks has a distinct chestnut tint, and this is more marked in the similar but paler female of *C. s. kawarahiba*. The male of both Japanese races is darker than the nominate form. The crown and nape of the head are slate grey, forming a well-defined cap extending down onto the neck.

The mantle is olive-brown, the rump greenish-yellow, and the tail-coverts grey. The forehead, supercilium, ear-coverts and throat are yellowish-green, and lores and forehead have a blackish tint. The underside is chestnut-brown heavily suffused with yellow, with some green on the mid-breast. The wings and tail are like those of the nominate race, save that in the latter the carpal joints show only a little yellow feathering, while in the Japanese races there is more extensive yellow on the primary coverts.

The male of another race, *C. s. kittlitzi*, from Bonin Islands shows more extensive yellow pigment and is green over most of body and head, with a brown tint on mantle and flanks and grey on the crown. The amount of yellow on the wing-bar of the primaries is reduced by black pigment along the rachis to a yellow area on the outer web and a reduced pale yellow area towards the edge of the inner web. The edges of the inner secondaries are grey. Apart from the complete wing-bar the Bonin bird would appear to be more similar to *C. chloris* than to *C. sinica*. The female is dull brown, greyer-brown on the head, and similar to the females of Japanese races but duller.

The Common Greenfinch, *Carduelis chloris*, is a paler, greener version of these birds. The male of the eastern form, *C. c. turkestanicus*, is ash-grey on crown and nape, and this also extends on to the posterior part of the ear-coverts, but in the nominate form the crown is green. The eastern birds are mainly green and yellow, but in the western forms the winter plumage has brown tips to the feathers of mantle and flanks, giving them a distinct brown tint. As in *C. sinica kittlitzi* the edges of the inner secondaries are grey. The main difference from *C. sinica* lies in the fact that the yellow wing-bar is further reduced to yellow outer webs towards the bases of the primaries only, with a white area towards edge of the inner web like that of *C. carduelis*.

The female of Oustalet's Black-headed Greenfinch, *C. ambigua*, of N.W. China is very like the female of *C. sinica kittlitzi* but a little darker above and yellower below. It is olive brown on the mantle and green on the rump, with grey upper tail-coverts. Below and on the throat it is greenish-yellow. There is a yellow wing-bar and grey edges to the secondary coverts. The head, with the exception of the throat, is dark grey. The male is generally greener, with a black head. The outer tail-feathers have the extensive yellow bases typical of this species group.

In the Black-headed or Himalayan Greenfinch, *C. spinoides*, the dorsal surface becomes darker and the ventral surface lighter. The female is very dark olive-brown on the mantle with an almost black crown and a yellow rump. Below and on the throat it is pale yellow. The male is blackish-brown on the mantle and crown, and deep yellow on the rump and under side. The edges of the inner secondaries are almost white. The wing-bar is yellow, and as in *C. spinus* is reinforced by yellow edges to the greater secondary coverts. The lesser and median coverts of the male are yellow, forming a conspicuous "shoulder" patch; but in the female only the median coverts are yellow, the lesser coverts being green. The outer tail feathers are yellow with dark tips and dark pigment along the rachis. The head pattern is very like that of *C. spinus* but with greater contrast. The crown, ear-coverts and a small patch on either side of the yellow throat are blackish-brown. The lores and supercilium are yellow, and a yellow border continuing around the dark ear-coverts isolates these from the crown and throat patch. The posterior yellow border continues upwards to give a suggestion of a narrow yellow band at the hind edge of the nape, similar to the pale zone posterior to the dark cap of *C. spinus*.

A closely related species, *C. monguilloti*, of Annam has even more black in the plumage than the last. It is almost black dorsally with some faint evidence of masked yellow pigment on the mantle and a poorly defined yellow rump. Below it is yellow with short blackish streaks on the breast. There is a yellow wing-bar and yellow on the lesser wing-coverts of the male. Outer tail feathers are yellow with black on the tip and along the rachis. The throat is yellow but the remainder of the head is black, with a well-defined narrow yellow collar which almost meets at mid-nape.

These last three species show a divergent and more contrasting trend in plumage colouring but are clearly derived from the *C. sinica* type and show patterns suggestive of those found in *C. spinus*.

(d) *Generic characters*

From this review of plumage pattern in the genus *Carduelis* it is possible to determine that the characters most likely to occur in related species are—a wing-bar formed by light bases to the flight feathers; light patches on outer tail feathers; a green, yellow, or white contrasting rump and a tendency for distinct pale edges to the inner secondaries. Less constant characters are—light edges to greater secondary coverts; light coloured median and lesser secondary coverts forming a pale "shoulder" patch, and confined to the median coverts in the female; grey or black colour on crown and nape and yellow pigment in the plumage.

THE GENUS *Fringilla*

(a) *Chaffinch*

The body colouring of the female Chaffinch, *F. coelebs*, is very similar to that of the female of *C. chloris*, being olive brown above, paler below with a green rump. The presence of yellowish margins to the outer web of flight feathers on wings and tail increases this resemblance. The male in the breeding season bears a strong resemblance in dorsal colouring to the males of the Japanese races of *C. sinica*. The latter is ash-grey on crown and nape with blackish feathering on the forehead, warm brown with a chestnut tint on the mantle feathers, which are greener towards the base, yellowish-green on the rump and grey on the upper tail-coverts. The male of *F. coelebs* is blue-grey on crown and nape with a bold black forehead, chestnut-brown on mantle feathers which are green towards the base, green on the rump, and grey and green on the upper tail-coverts. The major difference is in the colouring of the underside, which in *F. coelebs* is chestnut-red, deeper on the sides of the head and upper breast but otherwise appearing as a pink tint on throat, belly and flanks. Reference has already been made to the presence of this chestnut-red pigment on the under side of *C. sinica*, where it is especially apparent on the females of the Japanese races. Conversely, males of *F. coelebs* have marked yellow pigment. Non-melanic variant individuals are white, and as might be expected, have yellow pigment on mantle, rump and the edges of flight feathers; but in addition areas of yellow pigment are also present on the sides of the head and on either side of the upper breast in those areas where the chestnut colouring of the normal bird has a warmer tint.

In *F. coelebs* the light edges of the inner secondaries are reduced to narrow pale yellow margins. The wing-bar is white, and like that of *C. spinus* is absent from the first few primaries but otherwise complete. As in *C. spinus* and *C. spinoides* there are white tips to the greater secondary coverts forming a wing-bar. As in *C. spinoides* the median and lesser coverts of the male are light in colour, white in the present species, and form a conspicuous "shoulder" patch. The female of *F. coelebs* like the female of *C. spinoides* has the light patch restricted to the median coverts and the tips of a few adjacent lesser coverts.

The outer tail feathers of *F. coelebs* have a diagonal area of white extending to the tips on the inner webs, with black pigment towards the base of the feather and along the rachis, broadening towards the tip. The shape of the white area shows individual variation and would appear to be homologous with the white areas on the tail feathers of *C. carduelis* and the corresponding yellow patches on the tail feathers of other species (fig.).

F. coelebs has given rise to isolate populations in N.W. Africa and on the Atlantic islands, and these show the trend common in island forms for distinct specific signal markings to be lost in species isolated in areas where competitors are absent. In *F. c. spodiogenia* and *F. c. africana* the white "shoulder" patch is confined to the median coverts. In these races the blue-grey head colouring extends down over the ear-coverts with a similar distribution to that of the black on *F. montifringilla*. The black on the forehead extends to the lores in a manner similar to that of *C. sinica minor*. The mantle is green, like the rump. In the races of the Atlantic islands the green of the mantle is progressively lost and both back and flanks become blue-grey. On the Canary Islands an earlier invasion has given rise to a separate species, *F. teydea*. This is entirely blue-grey, with pale tips to the greater and median secondary coverts and tiny relict traces of white on the concealed bases of a few flight feathers.

(b) *Brambling*

The plumage colouring of the Brambling, *F. montifringilla*, would appear to bear the same relationship to that of *F. coelebs* as does that of *C. spinoides* and *C. monguilloti* to *C. sinica*. In both cases there is greater contrast and an extension of the amount of black plumage.

In *F. montifringilla* the male is black on head and mantle, but as in the *Carduelis* species quoted, the throat is pale. The size of the wing-bar is reduced, and the light areas on coverts and inner secondaries are tinted with chestnut-red. There are narrow yellow edges on the flight feathers. The rump is white, and white extends over belly and lower breast, while the upper breast and throat are light chestnut-red with a hint of the presence of yellow pigment. Yellow pigment is visible on the feathers of the carpal joint and on feathers bordering the upper breast and normally concealed by the wing when the bird is at rest. There is no white on the tail of the male but the female shows a faint diagonal streak on the outermost feather. The plumage of the female is similar to that of the male but brown fringes to the feathers give it a mottled appearance. The sides of the head are grey and the feather edges appear to conceal a dark cap extending down on to the nape on either side but with a whitish patch on mid-nape.

(c) *Discussion of relationship*

It is apparent that all the characters of plumage pattern and colour found typical of species of the genus *Carduelis* are also present as major plumage characters in the genus *Fringilla*. This suggests a close and direct relationship between the two genera. In view of the relationship of *Fringilla* and the New World Emberizinae suggested by Tordoff (1954) it is necessary to consider briefly the plumage characters of the latter group. The plumage trends to be brown and heavily streaked, but this gives way to uniform colouring in some species. Species-specific markings are usually confined to the head and breast which are often boldly patterned. There are pale tips to the median and greater coverts in some species, but wing-bars formed by pale bases to flight feathers are absent. Rump colouring is not conspicuously different, and yellow pigment appears to be absent. There does not appear to be any reason to link *Fringilla* with this group on the basis of plumage characters.

The retention by *F. coelebs* of conspicuous plumage colouring in the mainland and its loss in isolate forms suggests that these colours have a valency as specific signals in regions where similar species are present. If this species had been derived from the American emberizids and had invaded the Palaearctic, it might be expected that it would retain characters which distinguished it from the cardueline finches and it would be extremely improbable that it would evolve a plumage extremely convergent with that of the genus *Carduelis*. Such a resemblance is, in this case, almost certainly evidence of close relationship, and from this evidence of plumage colour and pattern it is considered that the genus *Fringilla* is a part of the Old World finches of the family Fringillidae and that its plumage characters reveal a close affinity with the genus *Carduelis*.

Summary

Most related groups of species show common characters of plumage pattern and colour indicating their affinity. An examination of such characters in the genus *Carduelis* (including *Spinus*, *Chloris*, and *Hypacanthis*) and *Fringilla*, revealed that the typical characters of the first genus were also present in the second. *Fringilla* does not share the plumage pattern and colour characters of the New World Emberizinae, and it is considered that the present evidence helps to confirm the affinity of *Fringilla* with the Old World cardueline finches.

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A new race of *Lybius torquatus* from Tanzania

by J. G. Williams

Received 3rd November, 1965

Among a small collection of birds collected at South Ulanga, Eastern Region, Tanzania, by Mr. Elias Numpungu of Tanzania National Parks, are two specimens of a very distinct, undescribed race of *Lybius torquatus*. which I name

Lybius torquatus nampunju subsp. nov.

in honour of the collector.

Type: adult male, testes small. Locality South Ulanga, Eastern Region, Tanzania; altitude 2,000 feet; 28th November, 1964. Collector Mr. Elias Nampunju.

Description: Differs from all other races except *Lybius torquatus albigularis* in lacking all red in the plumage. Differs from *albigularis* in having the throat and ear-coverts uniform creamy-white, not black or grey flecked with white.

Measurements: exposed culmen 21; wing 82; tail 49; tarsus 22 mm.

Soft parts: iris brown; bill black; feet slate-grey.

Paratype: adult male, testes slightly enlarged, locality South Ulanga, Eastern Region, Tanzania; 27th November, 1964.

Measurements: exposed culmen 20; wing 84; tail 50; tarsus 22 mm.

The two specimens were collected in a fruiting fig tree in open woodland.

Type to be deposited in the British Museum (Natural History). Paratype deposited in collection of National Museum (formerly Coryndon Museum) Nairobi, Kenya.

A new cormorant from Uganda

by J. G. Williams

Received 3rd November, 1965

On 26th January, 1964, whilst visiting the Queen Elizabeth National Park, Western Uganda, with Mrs. Peter Curry, her son Mr. Patrick Curry and Mr. Bill Ryan, a number of cormorants in full breeding plumage closely resembling *Phalacrocorax carbo sinensis* were noticed among typical breeding plumaged White-necked Cormorants resting on a sandbank at the Lake Edward mouth of the Kazinga Channel. Permission was granted by the Warden of the National Park for a pair of these birds to be collected.

The two specimens secured were an adult male and female, both in full breeding condition, the female having an unshelled egg in the oviduct. When compared with specimens of *P.c. sinensis* it was evident that the Lake Edward specimens differed sufficiently to be described as a new race of *Phalacrocorax carbo*. I have pleasure in naming this new cormorant

Phalacrocorax carbo patricki subsp. nov.

in honour of Patrick Curry who first noticed the new birds amongst a flock of White-necked Cormorants.

Type: Adult male: full breeding condition.

Locality: Kazinga Channel, Lake Edward, Western Uganda; 3,000 feet; 26th January, 1964.

Description: Differs from *P.c. sinensis* in having less extensive white plumes on the head and neck, and the cheeks and chin coffee-brown merging to brownish-white towards bill, not entirely whitish; fore-throat tinged brown.

Measurements and soft parts: exposed culmen 69; wing 332; tail 160; tarsus 60 mm.

Iris: deep sea green; skin around eye black with small turquoise-blue spots, most marked around eye; indistinct line of pale yellow below eye;

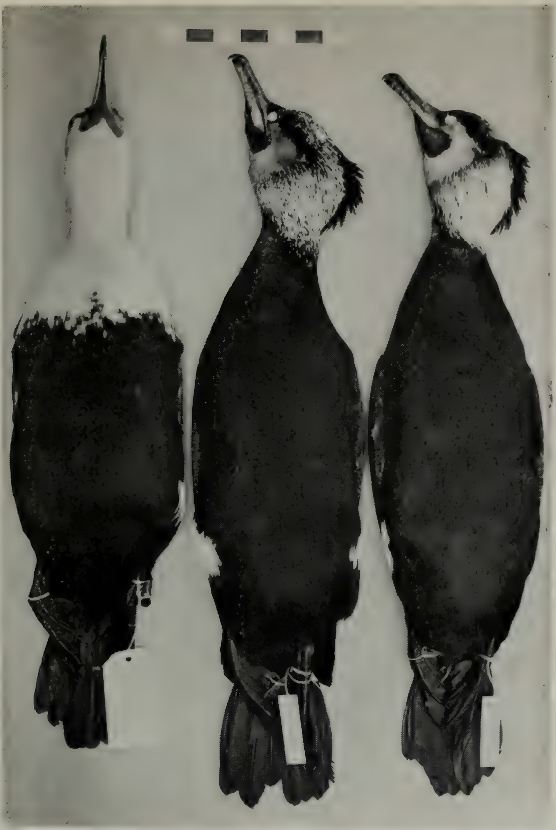


PLATE I

Left to right: *Phalacrocorax lucidus lugubris*; type male
P. carbo patricki: paratype female *P.c. patricki.*

triangular patch of bright salmon pink between eye and gape; bill dark leaden horn-grey, paler at base of lower mandible; throat black with small yellowish spots, greyish towards base; feet black.

Paratype: adult female; differs from male in having longer white head and neck plumes, but less extensive than in *P.c. sinensis.*

Measurements: exposed culmen 58; wing 308; tail 144; tarsus 54 mm.

Type to be deposited in British Museum (Natural History). Paratype deposited in National Museum (formerly Coryndon Museum), Nairobi, Kenya.

At first it was thought possible that *P.c. patricki* represented an undiscovered breeding plumage of the White-necked Cormorant, but an examination of several hundred adult White-necked Cormorants at close quarters through powerful binoculars did not reveal any birds of intermediate plumage. Also during subsequent visits to the Queen Elizabeth Park examples of non-breeding *patricki* have been seen in which the under parts and neck were black, with or without a brownish tinge to the throat.

In view of the discovery of this new race of *P. carbo* in Western Uganda, the taxonomic status of the East African population of White-necked Cormorants must be reviewed. This bird must now be known as *Phalacrocorax lucidus lugubris* Rüppell, not *P. carbo lugubris*.

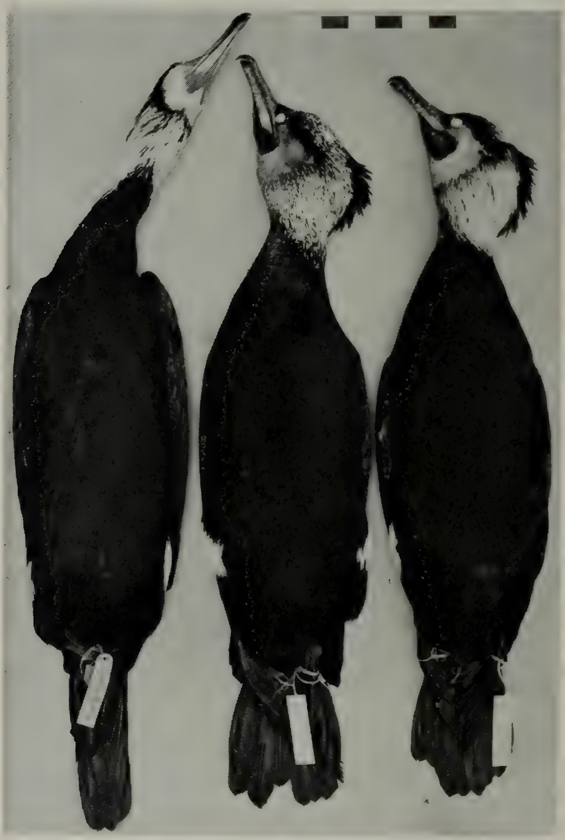


PLATE II

Left to right: *Phalacrocorax carbo sinensis:* male and female *P.c. patricki.*
Photographs by Bob Campbell

A Chilean Pintail x Red-crested Pochard

by BRYAN L. SAGE

Received 14th September, 1965

This paper describes a male and female inter-generic hybrid in which the male parent was a Chilean Pintail *Anas georgica spinicauda* Vieillot, and the duck a Red-crested Pochard *Netta rufina* (Pallas). Both specimens were preserved as study skins in December 1964 and are now in my collection.

According to Gray (1958) the only previous instance of hybridisation between these species was a single example that was in the collection of the Wildfowl Trust at Slimbridge, Gloucestershire, in 1952. Hybrids of this parentage do not, of course, occur in the wild state as the geographical ranges of the two species do not overlap.

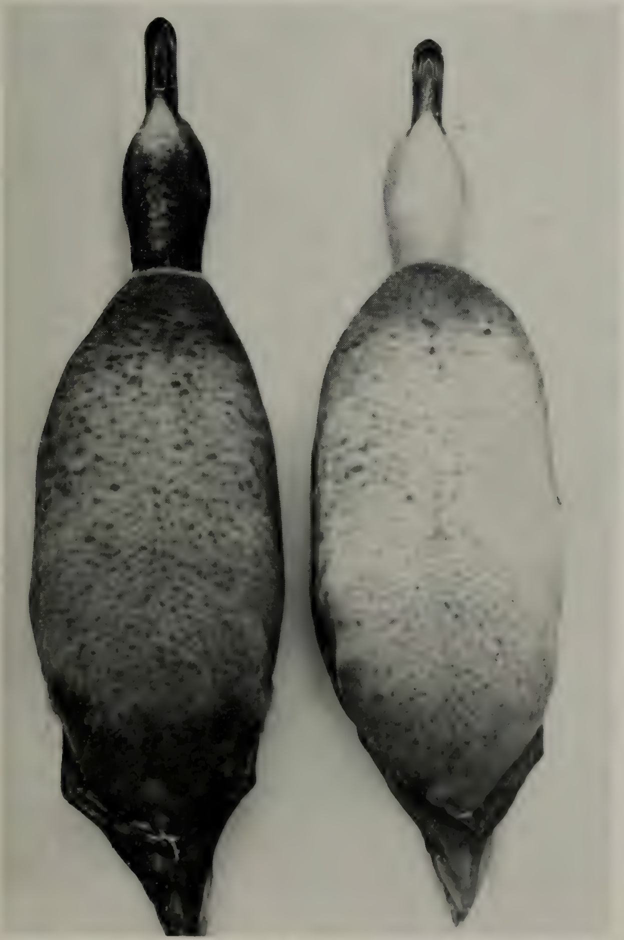
MALE *Plumage*

Upper parts:

Back and mantle dull hair-brown, slightly darker than in the Red-crested Pochard, and with extensive dark brown centres to the feathers of the back. Rump and upper-tail coverts grey-brown. Rectrices uniform darker brown.

Under parts:

Uniformly pale brown, slightly darker in the region of the vent and with a cinnamon suffusion on the upper breast and down the sides of the breast. Some feathers of the breast and abdomen with slightly darker centres



Male (left) and female (right) of Chilean Pintail x Red-crested Pochard. Note the white neck-ring in the male.

resulting in scattered faint spotting. The flank feathers extensively and finely vermiculated with wavy transverse bars of dark brown. Under tail-coverts dark brownish with paler tips and suffused with cinnamon.

Head and neck:

Entirely dark brown with a metallic purple gloss posterior to the eyes. Crown flecked with blackish. Chin pale brownish-white, this shade extending irregularly down the foreneck and also towards the base of the bill in the loral region.

Wings:

Wing-coverts mouse-grey. Speculum darkish brown with no metallic gloss, and bordered above and below with whitish. Primaries grey-brown, darker towards the tips.

Soft parts:

Legs and feet greenish-grey. Iris dark reddish-brown. Bill yellow with a broad black line along the culmen, black nail, and narrowly bordered with black at the cutting edge from the nostrils to within about ¼″ of the nail.

FEMALE

Upper parts:

Darker brown than the Red-crested Pochard, being about the same shade as the Chilean Pintail but lacking such marked pale edgings to the feathers. Rump, upper tail-coverts and rectrices as in male hybrid.

Under parts:

Similar to female Red-crested Pochard but with traces of spotting as in the Chilean Pintail. The upper breast, sides of the breast and flanks strongly suffused with cinnamon. Under tail-coverts pale grey-brown also strongly suffused with cinnamon.

Head and neck:

Forehead, lores, crown and sides of head forming a cap as in the female Red-crested Pochard, but a darker shade of brown, and without the spotting as in the Chilean Pintail. Remainder of face grey-brown, chin and foreneck pale buffish and unspotted.

Wings:

Wing-coverts mouse-grey. Speculum pale grey-brown bordered with whitish above and below. Primaries dark grey-brown, paler on the inner webs.

Soft parts:

Legs and feet greenish-grey. Iris dark reddish-brown. Bill yellow with broad black line along culmen; the yellow gives way to pale blue towards the tip. Nail and cutting edge each side black for about ½″.

The measurements of the hybrids are not wholly intermediate, neither do they fall entirely within the range of either of the parental species. The wing measurement of both sexes falls within the range of the Chilean Pintail. The male hybrid has an intermediate culmen, whilst that of the female is within the range for the Red-crested Pochard. The maximum width of the bill in the hybrids is on the upper limit for that measurement in the Chilean Pintail, whilst in the depth of the bill at the posterior edge of the nostrils the male agrees with the Red-crested Pochard, but the female is well within the range for the Chilean Pintail.

Comparative measurements (in mm.)

	Hybrids		Red-crested Pochard		Chilean Pintail	
	♂	♀	♂	♀	♂	♀
Wing	252	240	256–278	249–259	230–260	212–240
Culmen from feathers	47	45	48–52	44–50	41–43	40–41
Bill—max. width	21	21	24–28 (25.2)	24–25 (24.3)	18–21 (19.4)	
depth at nostrils	20.5	17.5	19–21 (20.2)	18–20 (19.0)	16–21 (18.8)	
Tail	78	76	58–74		140–148	

Notes:
(a) wing and culmen measurements of the parental species are from Delacour & Scott (1956–1959).
(b) the measurements for maximum width of the bill and depth at nostrils in the parental species are from material in the British Museum (Natural History), 6 specimens in each case.
(c) figures in parentheses are average measurements.

Discussion

The female hybrid does not call for any particular comment. As is evident from the plumage description it is, in all main characteristics, a clear intermediate between the parental species.

The male, however, exhibits a number of characters that call for comment. Not only is this hybrid the result of a cross between species in two different genera, the parental species are also quite different as regards sexual dimorphism in the plumage. In the Red-crested Pochard the sexes are markedly dimorphic, whilst in the Chilean Pintail they are alike. The resulting hybrid, rather than resembling either of the parental species, is in fact superficially similar to the drake of the Northern Pintail *Anas acuta acuta* Linnaeus. It has the dark brown head of this species, and the blackish markings on the crown feathers. There is a noticeable metallic purple gloss on the face below and behind the eyes, and on the sides of the neck. A similar gloss is found on the head of the drake Northern Pintail. The only character of the head plumage of the hybrid that can be referred to the Red-crested Pochard is the development of the feathers of the back of the head to form a distinct crest. The whitish-brown area on the chin, throat, foreneck, and at the lower base of the bill (see plate) is, I consider, derived from the Chilean Pintail in which it occurs in both sexes. A Northern Pintail character that has gained expression in the body plumage is the fine, wavy transverse barring on the feathers of the flanks. Certainly the most interesting character exhibited by this hybrid is the narrow whitish ring round the lower half of the base of the neck as shown in the accompanying photograph. The white neck-ring is found in its most advanced form in the Mallard *Anas platyrhynchos* Linnaeus, and the Falcated Duck *Anas falcata* Georgi, in which it is a normal character of the drakes in full plumage. The drake of the New Zealand Brown Teal *Anas aucklandica chlorotis* Gray has this character in a less developed form. It is also known to occur as a variant in other species of ducks such as the Gadwall *Anas strepera* Linnaeus (Harrison & Harrison 1959, 1963b), and the European Green-winged Teal *Anas crecca crecca* Linnaeus (Harrison & Harrison, 1962). It has also been noted in a hybrid Argentine Red Shoveler *Anas platalea* Vieillot x Northern Shoveler *Anas clypeata* Linnaeus (Harrison & Harrison 1963a). Furthermore, it occurs quite frequently as a transient character in the drake Northern Shoveler during moult, and less frequently in the drake Northern Pintail in the same stage of plumage. There is now ample evidence that this character is indicative of a close relationship between the species mentioned.

There is, so far as I am aware, no record of a white neck-ring occurring as a variant in any stage of plumage of either the Red-crested Pochard or the Chilean Pintail. From the morphology of the drake hybrid under discussion we must postulate that one of the parental species, clearly the Chilean Pintail, is related to the Northern Pintail and carries genes for certain characteristics of that species which, in the present case, have gained expression as a result of hybridisation. There can be no reasonable doubt that the group of yellow-billed pintails of the southern hemisphere, which includes the Chilean Pintail, must have evolved from the same stock as the primarily northern hemisphere group of blue-billed pintails. In addition, the occurrence of a whitish neck-ring in the hybrid not only indicates relationship with the Northern Pintail and other species of *Anas* mentioned above, but also supports the hypothesis that this is an ancient character that is latent in numerous species of *Anas*.

Acknowledgements

I am grateful to Mr. John Hall of Ixworth, Suffolk, for presenting me with these two hybrids which had been bred by him in captivity. I am indebted also to Dr. Geoffrey Matthews of the Wildfowl Trust for the loan of comparative material, and to Mr. J. D. Macdonald of the British Museum (Natural History) for access to material in the Bird Room.

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The Crowned Crane at Lake Rudolf

by OSCAR T. OWRE

Received 13th August, 1965

It is unusual if one does not find in the narratives of African explorers and adventurers, observations of animal life. Titles of their works, however, are often of such nature that even should they come to the attention of the biologist they would fail to attract his curiosity. The limbo of such titles concerning Kenya yields to ornithology a book by Arthur H. Neumann (1898), *Elephant-Hunting in East Equatorial Africa.* Sir Frederick Jackson, it is true, noted (1938:323) Neumann as having been observer of the now famous bee-eater-bustard relationship, but there is no mention of Neumann or of his publication in Jackson's (1938) bibliography of Kenya ornithology.

Among the many interesting observations made by Neumann, the third European to visit the shores of Lake Rudolf, is the notation (*ibid:*

290) that near the north end of the lake he encountered flocks of cranes feeding along the areas of cultivated shoreline. These cranes, Neumann wrote, were different in both calls and appearance from Crowned Cranes farther south.*

On January 19, 1959, the author, a member of the R.E. Maytag-University of Miami Expedition to Lake Rudolf, collected an adult male Crowned Crane, *Balearica pavonina* (Linnaeus), one of a pair of birds, from the marshes at the north-east end of the lake, not many miles from the point at which Neumann must have made his observations. This specimen is a part of the collections of the Department of Zoology of the University of Miami. Thus, the observations of an elephant hunter, keenly interested in natural history, are, after approximately 60 years, acknowledged and substantiated and *B. pavonina* is for the first time credited to the avifauna of Kenya. This record, however, is of greater interest than simply that of a species added to an avifaunal list.

There is at present an apparent hiatus between the northward range of the South African Crowned Crane, *Balearica regulorum* (Bennett) and the southward range of *B. pavonina* (see, *e.g.*, Walkinshaw, 1964:356). Just how great is the hiatus in range between these two closely related species of marsh-dwelling cranes and what may have been some of the factors which have determined it? Mr. Dennis Paulson, also a member of the Maytag-Miami Expedition, observed *B. regulorum* near Maralal, about 80 miles south of Lake Rudolf, on January 4, 1959. Lake Rudolf being approximately 145 miles in length, a distance of about 225 miles, then, separates points at which these species are at present known to occur.

The population of *B. pavonina* which is centred north of Kenya seems to a considerable extent concentrated about the Nile and its tributaries. Here, of course, are the marshes which it inhabits. Somewhat similar marshes rim the north end of Lake Rudolf. Between the lake and the Nile is an extensive area characterized by largely semi-arid conditions.

Certain speculations may now be introduced. It seems accepted knowledge that Rudolf, although at present occupying a landlocked basin, was, only a very few thousand years ago, more extensive than now, and, its waters at a much higher level, the lake drained into the Nile (see *e.g.*, Worthington, 1932:99). Now, it remains to be determined how large the population of cranes at Rudolf is currently and if this population represents a breeding one or one of only temporary visitation. I should note that the two birds I observed were engaged in what I interpreted as courtship display (although there was no obvious enlargement of the gonads of the specimen collected). It should also be noted that the combined observations of von Höhnel, Neumann, and myself of cranes at the lake cover a considerable period of late winter and spring. If the population is not of merely irregular occurrence, and I suggest that it is not, has its establishment here been a recent one or may it be viewed as a "relict" population, established at the time when Rudolf was a tributary of the Nile?

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* Neumann was not the first to observe cranes here, for Ludwig von Höhnel (1894, 2: 175) wrote that two or three cranes, one presumes of the same species, were seen at the north end of the lake in 1888. His narrative of the discovery of Lake Rudolf also contains numerous references to birds and has likewise been a part of the limbo referred to above, being uncited by Jackson and apparently by succeeding ornithologists working in Kenya.

A second speculation concerns the nature of the shoreline when the water level was higher and rainfall was greater than at present. One would expect the littoral area to be quite different from the barren area much of it now is. Habitat appropriate for the cranes may well have existed as far south as the present foot of the lake, presumably about the Saguata Swamp to the south, and possibly beyond this. Assuming that the two species of cranes had at one time a contiguous or overlapping range in this area, the present period of decreased rainfall and increasing aridity may have been a determining factor in the present hiatus in range.

What of the future? It seems evident that if the rapid drop in Rudolf's level continues, much of this shallow lake will dry up or, in the process, be reduced to seasonal swampy areas flooded by the Omo River. Neumann (*loc. cit:* 339), one might add, noted that with north winds the sudd-like aquatic growth surrounding the north end of the lake was pushed southward into the open water. Dropping lake levels attended by constant silting from the Omo favour the establishment of this growth along shallow shorelines. Even now, the delta of the Omo and the surrounding marshes are spreading rapidly southward into the lake. Thus, favourable habitat for *B. pavonina* may, *despite* increasing aridity, gradually extend south to a point considerably closer to the range of *B. regulorum*.

During the preparation of a manuscript on the avifauna of the Lake Rudolf area, I have become increasingly impressed with the opportunity which the interpreted history of the Rift Valley lakes affords our speculations concerning the fluctuations in the ecology and thus in the history of the populations of such birds as *B. pavonina*.

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On Moore's Olive Bulbul *(Pycnonotus simplex* subspp.)

by A. Hoogerwerf

Received 24th February, 1964

The only series of freshly collected material which I studied originates from Java's most western peninsula Udjung Kulon; in all other territories we visited in recent years (Princes Island, other islands in the Sunda Strait and the Karimundjawa, Bawean and Kangean Islands) the species was not found. In Udjung Kulon this bulbul may not be called rare though it seems to prefer the south coast, bordering the Indian Ocean which may be the case in the other parts of Java as pointed out earlier (Hoogerwerf[6]).

The series from this area consists of 15 specimens among which are nine males. Though in plumage both sexes are said to be alike the five adult females before me have more olive in the brown of the upper parts than any of the nine males, which makes both sexes at once distinguishable. Among these females there are four with slightly developed gonads; the remaining one had the ovarium well differentiated with ova of 1–3 mm., but the plumage is exactly similar. The same holds good for the males among which are two having the gonads very small against six with testicles of 2–5 and one of 8–10 mm. The rather small individual differences in the colour of the male plumage seem to have nothing to do with the development of the reproductive organs.

When comparing these fresh skins with old material from Java it is evident that, also in this plain-coloured bulbul, important post-mortem changes in certain parts of the plumage take place: old skins average in being much lighter owing to the lack of olive in the brown of the upper parts. Therefore material of both categories can be separated at once.

The old specimens belonging to the nominate race(7) and those of *perplexus*(15) do not differ much from our fresh material of *prillwitzi* so far as it concerns the upper parts. But they can be distinguished without difficulty from birds of the latter race collected at about the same time, making acceptable Hartert's[5] diagnosis of *prillwitzi*. The only difference with old material of *prillwitzi* when compared with *simplex* and *perplexus* consists of the less vivid colour of the upper surface caused by the lack of any trace of olive in the brown. Between old skins of *simplex* and those of *perplexus* there is little constant difference, but a bird belonging to *simplex* from Tapanuli (Sumatra) is much darker than any other fresh or old skin before me and all four specimens coming from the Riouw Archipelago classified as *simplex* (Riouw is within the range of *simplex* according to Peters[7]) average in being lighter than any Sumatran skin.

On the under parts old Javan material averages in being duller and much yellower than fresh skins. It is with a view to this fact that Hartert's diagnosis seems to be not quite correct on this point, for it may be suggested that fresh *prillwitzi* skins actually do not average in having so much more yellow below than *simplex* and *perplexus*, but they may be somewhat paler. As a consequence of this, old material of both other subspecies differs less obviously from fresh *prillwitzi* than is the case between fresh and old material of this latter form. But because fresh *simplex* and *perplexus* may be darker below than old material it seems justified to suppose that *prillwitzi* has much lighter under parts than birds belonging to both other subspecies. Among the four skins of *simplex* from the Riouw Archipelago there are two which are lighter than any other skin of the 45 specimens belonging to all three subspecies discussed here. We found a rather similar situation in *Pycnonotus plumosus* coming from those islands, which makes it justified to study more thoroughly both these species living in the Riouw Archipelago, on the basis of larger series of fresh material than was previously possible.

In fresh as well as in old skins of *prillwitzi* the under tail-coverts average darker than in old *simplex* or *perplexus* because they are distinctly more olivaceous in *prillwitzi*; on this point there is not much difference between old and fresh material of the races discussed in this paper, so that this colour difference is likely to be present in all three, as pointed out by Hartert.

From the measurements found by me it seems evident that *prillwitzi* averages only slightly longer in the bill than in the nominate race and also the width of the bill does not differ so much. *Prillwitzi* averages in being distinctly smaller than *simplex*, in the wing as well as in the tail, in my opinion important enough to justify separation, even if there were no other differences; *perplexus* seems to agree in this respect with *prillwitzi*. On account of the fact that *perplexus* and *simplex* are similar in plumage, thus differing from *prillwitzi*, it is evident that *prillwitzi* and *perplexus* cannot be identical, even if we do not take into account the colour of the irides which might have subspecific significance in the present species.

To the difference in colour of the irides between *simplex* and *perplexus*, as pointed out by Chasen and Boden Kloss[3] *viz* white in *simplex* against red in *perplexus*, which may perhaps prove to be a rather doubtful characteristic, can be added a difference in wing and tail-length as is shown by the figures given below of the material measured by me. But it may not be excluded that my figures are somewhat exaggerated as is evident from the measurements compiled from literature, showing a wing length in the males of *perplexus* of 76–87.5 and 75–81.5 mm. in the females. This should mean that also so far as it concerns the measurements the difference between both these races is far from being spectacular.

Though Hartert did not pay attention to the colour of the iris Chasen and Boden Kloss called this orange or orange yellow in *prillwitzi*, but in my experience there is some individual variation in this respect because we noted as eye-colour in freshly killed Javan birds: light red, orange red, redbrown and light ochreous brown, which apparently does not differ much from *perplexus*.

According to de Schauensee[8] the iris of the birds collected by Dr. W. L. Abbott in the Malay Peninsula (*P.s. simplex*) are recorded as "white, yellowish white or gray-white" and in one bird "pale yellow". In *prillwitzi* of Java the iris can be white (though *not* established by me) or orange, according to the same author while in *perplexus* it should be, according to Chasen, "red", "redbrown" and "yellowish white" in subadult birds. For some birds examined by de Schauensee himself he gives as the colour of the irides: Sumatra ♂, white; Nias 2♀, white; Batu Islands, white; Bangka ♂ (sub-adult), orange and Java 3♂♀, orange. This indeed seems to be an affirmation of the view that *simplex* has a white or whitish iris with the exception of Bangka birds, considered by Deignan[4] to belong to a different race.

Notwithstanding the indications mentioned above pointing to the validity of a difference in eye-colour as a subspecific character, I personally am of the opinion that it is very dangerous to regard colour differences in irides as racial characters, certainly in a bird of which so little is known, as in this case.

I did not see any material from the Anamba and North Natuna Islands, known as *halizonus*, nor of *oblitus* known from Bangka, Billiton and parts of Borneo and Natuna Islands, so that I have no opinion about the validity of these races. The subspecies *oblitus* was described by Deignan in 1954[4] from the South Natunas and Peters' checklist includes Bangka into the range of this subspecies, though de Schauensee[8] mentions *perplexus* as the race living on this island. The subspecies *chloeodis* is considered as a synonym of *simplex* and *axanthizus* is synonymized with *halizonus* (see Chasen[1] and Peters[7]). When compared with birds of the nominate race from Sumatra the diagnosis of *halizonus* mentions the larger size, darker lower parts, and paler, more greenish upper surface. Iris white or grey. Representatives of *oblitus* should differ from *halizonus* by having the iris red instead of white and from *perplexus* by longer and heavier bill, and probably (!) also by other measurements.

Measurements (in mm.)

♂♂ Wing; *simplex:* 79, 80, 82, 83, 84, 84, 85; *perplexus:* 74, 75, 75, 75, 80, 80, 82, 82, 83, 85; *prillwitzi* (Java): 77, 80, 82; *prillwitzi* (Udjung Kulon): 75, 77, 77, 78, 80, 80, 81, 81, 82.

Tail; *simplex:* 69, 70, 71, 72, 73, 74, 77; *perplexus:* 64, 66, 66, 67, 67, 67, 69, 72, 72, 75; *prillwitzi* (Java): 69, 71, 71; *prillwitzi* (Udjung Kulon): 65, 66, 66, 67, 68, 68, 69, 70.

Culmen; *simplex:* 11.8, 12.5, 12.5, 12.5, 12.8, 13.8, 14.5; *perplexus:* 10.2, 12.2, 12.2, 12.5, 12.6, 12.6, 12.7, 12.9, 13.2, 13.3; *prillwitzi* (Java): 12.1, 13.2, 13.5; *prillwitzi* (Udjung Kulon): 11.5, 12.4, 12.5, 13.0, 13.2, 13.2, 13.3, 14.9.

Max., min. and average measurements:

	simplex	*perplexus*	*prillwitzi* Java	*prillwitzi* Udjung Kulon
Wing	79–85	74–85	77–82	75–82
	82.43	79.10	79.67	79
Tail:	69–77	64–75	69–71	65–70
	72.29	68.50	70.33	67.38
Culmen:	11.8–14.5	10.2–13.3	12.1–13.5	11.5–14.9
	12.91	12.44	12.93	13

♀♀ Wing; *simplex:* none; *perplexus:* 76, 78, 78, 81, 82; *prillwitzi* (Java): 77, 78, 78, 78, 78; *prillwitzi* (Udjung Kulon): 73, 75, 77, 77, 80.

Tail; *perplexus:* 64, 66, 68, 69, 70; *prillwitzi* (Java): 66, 68, 68, 70; *prillwitzi* (Udjung Kulon): 63, 64, 64, 65, 68.

Culmen; *perplexus:* 12.2, 12.5, 12.5, 13; *prillwitzi* (Java): 11.1, 12.2, 12.4, 12.9, 13; *prillwitzi* (Udjung Kulon): 11.2, 12.2, 13, 13.1, 13.6.

Max., min. and average measurements:

	perplexus	*prillwitzi* Java	*prillwitzi* Udjung Kulon
Wing:	76–82	77–78	73–80
	79	77.80	76.40
Tail:	64–70	66–70	63–68
	67.40	68	64.80
Culmen:	12.2–13	11.1–13	11.2–13.6
	12.55	12.32	12.62

Some measurements compiled from literature:

de Schauensee[8]; *simplex:*

♂♂ *Wing:* 78 (Peninsular Siam); 81 (Sumatra)
♀♀ *Wing:* 74, 74; *Tail:* 63, 64 (Nias Island)
Wing: 84; *Tail:* 84 (Batu Islands)*

prillwitzi:

♂♂ *Wing:* 78, 78; *Tail:* 63, 66 (Java)
♀♀ *Wing:* 76, 80.5; *Tail:* 62, 63 (Java)

Voous[9]; *perplexus:*

♂♂ *Wing:* 80, 80, 81.5, 82, 87.5 (Borneo)
♀♀ *Wing:* 77, 79, 81.5 (Borneo)

Chasen[2]; *perplexus:*

♂♂ *Wing:* 76, 77, 82, 83, 85 (Billiton Island)
♀♀ *Wing:* 75, 75, 79 (Billiton Island)

Chasen & Boden Kloss[3]; *perplexus:*

♂♂ *Wing:* 82, 84, 85; *Tail:* 73, 73, 78 (North Borneo)
♀♀ *Wing:* 75, 78, 79; *Tail:* 70, 73, 75 (North Borneo)

References:

[1] Chasen F. N. A Handlist of Malaysian Birds; *Bulletin of the Raffles Museum*, Singapore, 11, 1935, p. 201.
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[5] Hartert, E. On Birds from Pahang, Eastern Malay Peninsula; *Novitates Zoologica*, 9, 1902, p. 56.
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[8] Schauensee, R. M. de. The Birds of the Island of Bangka, Indonesia; *Proceedings Academy Natural Sciences of Philadelphia*, 110, 1958, p. 289–290.
[9] Voous, K. H. Birds collected by Carl Lumholtz in Eastern and Central Borneo; Contribution no. 71, Zoölogical Museum, University of Oslo, 1961, p. 160.

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* 84 mm. for the tail is apparently a mistake.

CONTRIBUTORS

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Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

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DINNERS AND MEETINGS FOR 1966

15th March, 19th April, 17th May, 20th September, 18th October, 15th November and 20th December.

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BULLETIN

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The six hundred and thirty-third meeting of the Club was held at the Rembrandt Hotel, London, on the 15th March, 1966.

Chairman: Sir Landsborough Thomson

Members present: 17; Guests 9.

Mr. Peter Davis has kindly supplied this summary of his talk on the largest early September "fall" of migrant birds ever recorded for Britain.

The early September "rush" of 1965

Large arrivals of Scandinavian migrants have been recorded on the east coast of Britain in the first week of September in several years since 1956, though (curiously) there were no comparable falls at this time in the previous decade. The species involved were mainly the passerine summer visitors which migrate S.S.W. from Scandinavia to Iberia on the first stage of their autumn movement, and which are liable to be deflected west of their normal course by easterly winds. A fall much greater than these, and by far the largest ever recorded in Britain, occurred on the east-facing coast of East Anglia on 3rd September 1965, when vast numbers of birds which had left Scandinavia in fine anticyclonic weather encountered a belt of overcast succeeded by heavy rain in the southern part of the North Sea. Arrivals on a less spectacular scale also took place along most of the east coast, north to Shetland, as well as at Vlieland in Holland and at Heligoland.

It has been estimated that well over half a million migrants landed in the area of greatest concentration, the 24 miles of the North Suffolk coast between Sizewell and Hopton, with the arrival of the heaviest rain shortly after noon on the 3rd. These included some 250,000 Redstarts, 100,000 Wheatears, some tens of thousands of Pied Flycatchers and great numbers of Garden Warblers, Spotted Flycatchers, Willow Warblers and other species. An extraordinary number of Wrynecks and Bluethroats (probably some hundreds) arrived, and there were many northern waders, terns, and other non-passerines. "Vast clouds" of passerine migrants were actually seen to arrive from the sea and to drop down at the coast. At Lowestoft some even alighted on men standing in the open, and large numbers were killed by traffic on the streets. Many were evidently very tired, but unfortunately little information about their weights is recorded. Many failed to reach land, since numbers were washed up dead along the shoreline.

Further north, there were many hundreds of birds in all the coastal parishes of Norfolk, but the density here was much lower than in Suffolk. A few hundred appeared at many places along the coast north to Fair Isle, though in the north there were more on the 4th than on the 3rd, corresponding with the northward shift of the depression.

The sunbirds *Nectarinia bouvieri* and *batesi*

by C. W. BENSON and M. P. STUART IRWIN

Received 4th November, 1965

In preparing the following notes we are especially grateful to the Rev. Dr. William Serle for the loan of specimens and for advice, and in the latter respect also to Mrs. B. P. Hall and Major M. A. Traylor.

Nectarinia bouvieri (Shelley)

Benson & Irwin (1965) attributed with qualification a juvenile female collected on the Mwombezhi River, Zambia, at 12° 15′ S., 25° 34′ E., on 3rd May, 1964, to *N. batesi* (Ogilvie-Grant). Subsequently, on 2nd February, 1965, two females were collected by a University College of Rhodesia and Nyasaland expedition at the Zambezi Rapids, 11° 08′ S., 24° 10′ E. They are clearly not *batesi*, both having the chin and throat mottled and barred with dusky, and the tail glossy black without any of the olive tips and margins characteristic of that species, the outermost pair being a paler unglossy brown tipped whitish and with whitish margins to the outer webs. One of them has a single feather on either side of the breast (where pectoral tufts are represented in the males of many species of sunbird) tipped with vermillion, and a number of feathers on the back, mantle, crown and sides of the head tipped metallic green, more especially in the latter two areas. Including the chin and throat, and the tail, the Mwombezhi specimen agrees in plumage coloration with these other two. It has some tendency to a pale brown base to the lower mandible, but not nearly so marked as in *batesi*, while the other two have the bill wholly black. All three are in the National Museum, Bulawayo, and measure in mm. as follows:—

Registered number	*Locality*	*Wing*	*Tail*	*Culmen from base*
53324	Mwombezhi River	52	27	17
57444	Zambezi Rapids	55	35	18
57445	,, ,,	56	32	20

The Mwombezhi specimen, in which skull-ossification had not started, may not be fully grown, and has the tail-feathers still in sheath. The measurements of the other two are as large or larger than of any specimen of *batesi*, see below. They were sent to Dr. Serle, who attributed them to *bouvieri*, of which he lent us three males and six females, collected by him in the Southern Cameroons and in south-eastern Nigeria on the Obudu

Plateau, at 6° 25′ N., 9° 22′ E. The material of this species in the British Museum has also been available. The Zambian females are all washed with olive above and dull yellow below, and are indistinguishable from some other females, though several lack this wash completely, evidently due to wear, as Serle has suggested. One of his females resembles the Zambian specimen, registered number 57444, in having some vermillion tipping on the sides of the chest, and also has some subterminal metallic green tipping on the upper tail-coverts, as indicated by him (*Ibis*, 1950: 625). Measurements in mm. of Serle's material and that in the British Museum are as follows:—

	Wing	*Tail*	*Culmen from base*
	Cameroons/s. e. Nigeria		
17♂♂	54–60 (57.6)	36–41 (38.6)	20–22 (21.2)
12♀♀	52–55 (53.5)	32–36 (33.5)	19–20.5 (19.6)
	Uganda		
*2♂♂	56, 58	39.5	23
	Landana (Cabinda)		
1♂	52	35	22

*One specimen with tail incomplete, one with bill broken.

The male from Landana, collected by L. Petit on 30th June, 1876, is the type. As is to be expected in this coastal low-level locality, its wing and tail measurements are smaller than those of any other male. There are also three females from Landana in the British Museum, collected by Petit, which had been assigned to *bouvieri*. But they appear to belong to another species, and are being discussed by Benson in a separate note, below.

Although *bouvieri* has not been previously recorded from Zambia, its occurrence is not unduly surprising, since Schouteden (*Vog. Belg. Congo*, 8, 1956: 185) records it from as close as Kayembe Mukulu and Sandoa, and Traylor (1963) from several localities in northern Angola. Benson & Irwin (1965: 11) went so far as to suggest that the avifauna of northern Mwinilunga District had been fully catalogued. However, *bouvieri* is surely very uncommon there.

Nectarinia batesi (Ogilvie-Grant)

Ten Zambian specimens, mostly in the National Museum, Bulawayo, have been available. All are from the northern tip of the Mwinilunga District, from 11° 22′ northwards, evidently at the southernmost extremity of the range of the species. Serle, who has compared most of this series with seventeen specimens collected by him in the Southern Cameroons and south-eastern Nigeria, which he has also lent us, suggests that his material is slightly darker. Using also eighteen specimens in the British Museum from the same region as his material, it is apparent that there is this tendency. The difference is evident to some extent on both the upper and lower side, but is certainly not so well marked or constant as to justify giving the Zambian birds a subspecific name. Williams (*Bull. Brit. Orn. Cl.*, 1959: 101) concluded that there was no difference between Cameroons and Zambian birds, but on much less material than has now been available. Benson & Irwin (*Occ. Papers Nat. Mus. S. Rhod.*, 27B, 1964: 116) noted that a male and a female from Salujinga, collected in August/September, were darker above, and lacked the yellowish tone below of other Zambian birds. In the latter character, this also applies somewhat to two males dated 24th January, 1965 and 9th June, 1963. The remaining six, collected in May (one male), June (one male), October (two males, one female) and December (one male), are more yellowish below, as in all of the more northern specimens. The difference in these four does not seem attributable to age or seasonal change and it can only be suggested that there is some tendency to a lack of yellow below in some individual specimens. Indeed, they show a generally more greyish tone, both above and below, but to suggest that they are darker above is misleading.

The following are measurements in mm. of the foregoing material and of two Gaboon specimens in the British Museum:—

	Wing	*Tail*	*Culmen from base*
Cameroons/s.e. Nigeria			
21♂♂	49–53 (50.5)	24–29 (26.8)	16–18 (16.7)
13♀♀	46–49 (47.3)	22–26 (24.1)	14.5–16.5 (15.5)
1o	49.5	26.5	17
Gaboon			
2♀♀	45, 49	24, 25	15.5, 17
Zambia			
* 8♂♂	52–55 (53.7)	26–31 (28.3)	15–17 (16.2)
2♀♀	50, 52	25, 28	15, 16.5

*Includes two specimens from the Lisombo Stream, recorded by Benson & Irwin (1965) as females, wing 53, 54 mm., now assumed to have been mis-sexed.

The above figures suggest that Zambian birds have the wing and tail relatively long, but the bill proportionately shorter. See also the measurements given by Amadon (*Bull. Amer. Mus. Nat. Hist.*, 100 (3), 1953: 427) and by Chapin (*Bds. Belg. Congo*, 4, 1954: 206), a male from Fernando Po paralleling the Zambian males in its wing-length. Evidently Amadon's measurements of the culmen are of the exposed portion only.

The very similar *N. seimundi* (Ogilvie-Grant) is unknown in Zambia, though it occurs as near as northern Lunda (Traylor, 1963). It is distinguished from *batesi* by its wholly olive tail, instead of black merely fringed with olive, and in general plumage is brighter, more intensely yellow below. Measurements in mm. of material of *N. s. minor* (Bates) in the British Museum, including also one male from Uganda in the National Museum, Bulawayo, are:—

	Wing	*Tail*	*Culmen from base*
Cameroons/s.e. Nigeria			
*4♂♂	51, 52, 53, 55	28, 28, 29	16, 16, 16, 17
3♀♀	47, 48, 51	24.5, 25, 28	15, 15, 15.5
3oo	52, 53, 53	26.5, 28, 30	16, 16, 16.5
Rio Benito, border of Spanish Guinea and Gaboon			
1♂	51	28	15.5
Ndala Tando, Angola			
2♂♂	52, 57	27, 32	17, 17
3♀♀	49, 51, 52	25, 28, 28	15, 15, 15
Uganda			
1♂	55	30	16
2♀♀	50, 52	26, 27	15, 16

*One specimen with tail incomplete

The above figures suggest no very marked difference, including proportions, from those of *batesi*. The two forms have a wide geographical overlap, see White (1963: 60). We are, however, unaware of any record of *batesi* from Angola, though it surely must occur.

In the Cameroons, Serle (*Ibis*, 1954: 76 and 1965: 239) found both *batesi* and *seimundi* in secondary forest, and tells us that both are confined to moist forest. It is virtually impossible to distinguish them except in the hand, but he has collected one specimen of each in primary forest, and all his other specimens of both species were from secondary forest. He has even collected both in the same tree. He has the impression that both are birds of foliage rather than of blossoms. It is rare not to find insects in the stomachs of both, though both on occasion feed on fruit. However, whereas he has collected *seimundi* only in lowland forest, he has found *batesi* at 4,000 feet in the Rumpi hills, at 3,600 feet in the Bamenda highland foothills, and at 3,000 feet at the base of Mt. Kupé, as well as in lowland forest. However, in the south of its range, in northern Lunda, *seimundi* cannot occur much lower than 3,000 feet, while van Someren (*Uganda Journ*., 13, suppl., 1949) records it from Entebbe, nearer 4,000 feet. In north-western Zambia *batesi* lives at altitudes of about 4,500 feet.

To conclude, the only evidence of breeding activity in *batesi* from Zambia is from a male collected by T. B. Oatley at Salujinga, 13th May, 1965, with both testes measuring 5 x 4 mm., and apparently in breeding condition.

References:

Benson, C. W. and Irwin, M. P. Stuart 1965. Some birds from the North-Western Province, Zambia. *Arnoldia* (*Rhodesia*), 1(29).

Traylor, M. A. 1963. Check-list of Angolan birds. *Publ. Cult. Comp. Cia. Diamant. Angola*, 61.

White, C. M. N. 1963. *A revised check list of African flycatchers, tits, tree creepers, sunbirds, white-eyes, honey eaters, buntings, finches, weavers and waxbills.* Lusaka.

Some misidentified female sunbirds

by C. W. Benson

All specimens discussed in this note are in the British Museum. Arising from the immediately preceding note, the three females from Landana which had been assigned to *Nectarinia bouvieri* are brown above, with only a slight tendency to olive on the rump, and paler below than any female of *bouvieri*, being white with some pale yellowish wash. They lack the dusky barring and mottling on the chin and throat of that species, and merely have faint dusky streaking on the chest. They are indistinguishable from the adult female of *N. b. bifasciata* (Shaw), the immature male and female of which, however, have the chin and throat black. They have wing 52–53, tail 34–35, culmen from base 19.5–20 mm. Seventeen further females of this form, from Huxe, Ndala Tando, Dondo and Ambriz, in western Angola, have wing 51–55 (52.3), tail 30–35 (32.8), culmen from base 18–20.5 (19.2) mm. Males of *bifasciata* in full or partial metallic dress have also been available from these four localities, and in addition from Benguella, Chingoroi and Luanda, and from Cabinda at Landana and Chinchoxo.

Of these first three females (B. M. registered numbers 95.5.1. 2526–2528), number 2528 has a Shelley Museum label endorsed that it is the type of the female of *bouvieri* described and figured. Shelley's description and plate (1877: 227 and pl. 70) of the female of this species agrees with all three specimens, but he himself was not sure that the female type might not be a *bifasciata*. He also mentions under *bouvieri* specimens which are olive above, yellow below, more distinctly striped. Two females collected by W. J. Ansorge at Ndala Tando, 15th and 19th September, 1908, have some slight olive wash on the whole upper side, and are more yellowish below than any others of *bifasciata*, but this seems merely due to their being in very fresh dress. They are the only two specimens showing any such tendency, and in one of them the streaking on the chest is particularly obscure.

Properly placed with other females of *N. chloropygia* Jardine is one collected by Petit at Landana in June, 1876 (B. M. registered number 95.9.9. 44). It bears a Shelley Museum label endorsed "Figured Monogr. Sunbirds" and identified as *Cinnyris bifasciatus*. The supposed female of *bifasciata* figured in Shelley's plate 66 is indeed more olive above and more yellow below than Ansorge's two specimens of *bifasciata*. The black-throated bird also shown on this plate, presumably a young bird, may also not be a *bifasciata*. It is shown as olive on the upper side, but ten black-throated young *bifasciata*, from Cabinda and western Angola, are all brown above, without any sign of olive at all.

Apart from colour distinctions, the female of *chloropygia* is very small, that from Landana and three others from Ndala Tando having wing 48–49, tail 30.5–32, culmen from base 17–18, one 20.5 mm. The female of *N. cuprea* (Shaw) could perhaps be confused at a casual glance with that of *bouvieri* or *bifasciata*, but is mainly distinguished by being practically plain yellowish-olive below, and larger, nine Angolan females thus having wing 55–59 (57.2), tail 37–42 (39.0), culmen from base 19.5–22 (20.7) mm.

It must be made clear that no specimen identifiable with *bouvieri* collected by Petit in Cabinda has been found other than the male type from Cabinda mentioned by Benson & Irwin (*supra*).

Reference:
Shelley, G. E. 1876–80. *A monograph of the Nectariniidae*. London.

The birds of Christmas Island (Indian Ocean)

by A. J. Pearson

Received 29th November, 1965

Physiography

Christmas Island lies in the eastern part of the Indian Ocean in latitude 10° 25′ South and longitude 105° 42′ East. The island of Java is the nearest land, lying 200 miles to the north, Australia lies 900 miles to the south-east and the Cocos-Keeling islands 600 miles in a direction a little south of west. The submarine slopes of the island are very steep and depths of 1000 fathoms and more are found within two or three miles of the coast.

Geologically the island is a raised coral atoll, the highest point being approximately 1100 feet above sea level. It is roughly T shaped with the T lying on its side and the maximum length is about 13 miles. The total land area is 64 square miles. The land rises in a series of cliffs and terraces to a central plateau. The coastline is formed almost entirely by coral limestone cliffs, varying in height from 15 to 150 feet, which are sheer and undermined, making a landing from the sea virtually impossible. There are a few small beaches but on only two or three can a boat be got ashore. On the north coast is the only beach of any size, known as Flying Fish Cove, and this is in a semicircular bay which forms the only anchorage.

The phosphate deposits are chiefly on the plateau and second shore terrace. A few trees where Red-footed Boobies and Golden Tropic-birds nested have thus been removed but I doubt whether this has materially affected the birds. Neither does the large increase in the human population in recent years, bringing the total to just over three thousand, seem to have affected the sea birds. All birds on the island are protected by law and this law is enforced strictly.

General

The bird life of Christmas Island can be conveniently divided into—seafowl, resident land birds and migrants.

Several scientific papers have been written about the natural history of the island and the two chief ones are by Andrews (1900) and by Gibson-Hill (1947), the latter based on observations in 1939–40. My own observations are based on two periods of residence on the island together totalling two and a half years between September 1960 and March 1964.

The number of resident species of sea bird has remained constant at nine species since the first records in 1900, and there has been no record of any other migrant or vagrant species of sea bird at the island. This contrasts with the land birds of which nine residents and thirty-eight migrant and vagrant species occur.

SEAFOWL

Sula leucogaster (Boddaert). Brown Booby. This bird is very common; Gibson-Hill estimated approximately 5000 pairs in 1940 and I think this is a fair estimate still. It nests on the ground near the edge of the sea cliff or the first inland cliff though in one or two places nests have been found on flat ground at the head of a coral beach. Nesting occurs all the year round but the most popular months are March to May.

Sula sula rubripes Gould. Red-footed Booby. This species is also very common, particularly on the north and east coasts, and the total population as estimated by Gibson-Hill in 1940 was 5000 pairs which is roughly the same now. Nests are at the top of tall jungle trees on the shore terrace *i.e.* the strip of land 100–400 yards wide between the sea cliff and the first inland cliff. Nesting commences in April and May and the young birds start to fly in October and November. Their plumage is a dull grey-brown, lighter underneath but without the sharply defined line of demarcation present in the Brown Booby.

Sula abbotti Ridgway. Abbott's Booby. One of the least common boobies in the world and certainly the least common on Christmas Island. It is recorded as nesting also on Assumption Island just north of Madagascar (Alexander, 1955, p. 183) but there is some doubt as to the authenticity of this record. Gibson-Hill estimated the number in 1940 as 500–750 pairs. My own impression is that it is now very much less than this, probably only 100 pairs. It nests at the top of tall jungle trees well inland on the plateau at 500–800 feet above sea level. I found only five nesting places and at three of these there was only one nest. It is a noisy bird, bigger than the other two boobies and easily distinguished in flight by its slower wing beat, narrower wings and apparently longer neck. The nesting sites are inaccessible. Breeding starts in April and May and the young have usually flown by the end of the year.

Anous stolidus (Linnaeus). Common Noddy. Occurs all round the coast, nesting on the sea cliff and in one or two places on trees on the shore terrace. The breeding season is April to September and some birds remain at the island all the year round. Gibson-Hill's estimate of 4000–5000 breeding pairs in 1940 is probably unchanged.

Fregata minor (Gmelin). Great Frigate Bird. This bird is common everywhere. The male is all black, the female has a greyish white throat and breast and a bluish bill. Gibson-Hill estimated the population as 2000–3000 pairs in 1940, but I am unable to make an intelligent guess as to whether the numbers are more or less than this at present.

Fregata andrewsi Mathews. Christmas Island Frigate Bird. I believe Christmas Island is the only known breeding place of this species. Gibson-Hill states that Chasen found it plentiful in the region of the Anamba and Natuna islands in 1925 which suggested that it bred there but no proof of nesting was found. These islands lie between the Malay Peninsula and Borneo, in the South China Sea. It is a large frigate bird with distinctive markings. Gibson-Hill estimated the numbers as 1000–1500 pairs and again I am unable to say whether there are more or less than this at present, though it seems that the numbers of the two species of frigate bird are now about the same. I suspect that it is the Christmas Island species that has increased. Both species of frigate bird nest in tall trees on the shore terrace and the breeding season starts at the end of January and lasts up to ten months.

Phaethon rubricauda Boddaert. Red-tailed Tropic-bird. This bird is common and it nests in open crevices in either the sea, or first inland, cliff, sometimes up to 500 feet above sea level. Nesting begins in May and June and most young have flown by the end of the year. The numbers are estimated at 500 pairs and I don't think this has changed over the past 25 years. I have seen this species at sea 400 miles south of the island.

Phaethon lepturus fulvus Brandt. Golden Tropic-bird. The white-tailed tropic-bird is common in many parts of the tropics but the subspecies *fulvus* seems to be endemic to Christmas Island. I have seen an occasional bird with some yellow colouring at both Ocean Island and Nauru in the Central Pacific but at Christmas Island all are of the apricot-golden colour. Numbers estimated by Gibson-Hill were 300–450 pairs and this has probably remained the same. He also reported them only as nesting in holes in trees but I have found many nests in holes in rocks too. I have seen Golden Tropic-birds at sea 125 miles south of the island.

Demigretta sacra Gmelin. Reef Heron. This is an uncommon bird of the shore and intertidal zone, totalling probably not more than twenty pairs. Both white and grey phases are present. Only two or three nests have ever been found and I have never seen one. The paucity of the nest records is due to the difficult nature of the terrain preventing their being found.

RESIDENT LAND BIRDS

Ducula whartoni Sharpe. Christmas Island Imperial Pigeon. This pigeon is more often heard than seen as it inhabits the topmost branches of the forest trees on the inland plateau, feeding on the fruits. The call can be imitated easily and this often induces the bird to show itself. It used to be hunted for food and sport and concern for its survival was expressed on a number of occasions between 1900 and 1947, but along with all other birds is now protected and is quite common.

Chalcophaps indica natalis Lister. Christmas Island Emerald Dove. A small brown dove with green wings which inhabits the more open forest floor, both inland and on the shore terrace. In the dry season it often comes into the gardens in the Settlement.

Accipiter fasciatus natalis Lister. Christmas Island Goshawk. In my two and a half years on the island I saw less than ten birds of this species. Gibson-Hill reported it as fairly common over the whole island so its numbers have diminished considerably in the last twenty years. It used to be the only daytime bird of prey of the jungle but sometime between 1940 and 1960 another predator *Falco cenchroides*, Australian or Nankeen Kestrel found its way to the island, and this may have something to do with the decline of the goshawk.

Falco cenchroides Vigors & Horsfield. Australian or Nankeen Kestrel. I first identified this bird on the island in 1960 and it was then present in large numbers. It is an addition to the resident list and was first mentioned in the literature by Voous (1964) and he states that it is an Australian breeding bird, which only rarely migrates outside Australia but that it is known from Java. It is found around the Settlement, the phosphate workings and other cleared areas, and on 25 November 1962, forty kestrels were seen in the course of a ten mile drive across the island.

Ninox forbesi natalis Lister. Christmas Island Hawk Owl. This bird is a nocturnal predator and is widespread throughout the island. Its call sounds like the bark of a small terrier dog some distance away, though the bird may be near at hand.

Collocalia esculenta natalis Lister. Christmas Island Glossy Cave Swiftlet. These birds are present in large numbers everywhere. They nest in the twilight zone of caves, the open cup-shaped nests being fastened to the walls and roof, usually behind some projecting rock or stalactite formation such that the light from the cave entrance does not fall on them. On one occasion I found a swiftlet caught by one strand of a spider's web which stretched between ten feet high telegraph wires and the ground. The strand was wound tightly two or three times round one primary. The bird was hanging limply when found but was uninjured and was released.

Turdus poliocephalus erythropleurus Sharpe. Christmas Island Thrush. One of the commonest birds on the island and very tame. It has a very pleasant song, some phrases resembling *Turdus musicus* and others *Turdus merula*. It also has a delightful subsong, heard most frequently in the heat of the day and sounding similar to the normal song from a bird a hundred yards away, and one would then discover that it was coming from a bird sitting under a bush only a few feet away.

Zosterops natalis Lister. Christmas Island White-eye. Another bird common in all parts. They work through the undergrowth in flocks of up to three dozen. It is considered to be an endemic species by G. F. Mees, Zool. Verhand. Rijksmus. Nat. Hist. Leiden, 35, 1957, pp. 197–200.

Padda oryzivora Linnaeus. Java Sparrow. Liberated on the island in the early part of this century and now established, especially around the area of human habitation.

MIGRANTS

These birds are listed as having been recorded on the island. Most were mentioned by Gibson-Hill (1947). Additions recorded by me are marked with one asterisk and the dates of observation are given. Those mentioned in the paper by Voous (1964) are marked by two asterisks.

Myristicivora bicolor Scopoli. Pied Imperial Pigeon.
Porzana fusca Linnaeus. Malayan Ruddy Crake.
Charadrius apricarius Gmelin. Eastern Golden Plover.
Charadrius leschenaultii Lesson. Large Sand Plover.
Numenius phaeopus Scopoli. Whimbrel.
Capella stenura Bonaparte. Pintail Snipe.
Crocethia alba Pallas. Sanderling.
Erolia ruficollis Pallas. Red-necked Stint.
Erolia minutilla subminuta Middendorff. Long toed Stint.
Tringa totanus eurhinus Oberholser. Eastern Redshank.
Tringa incanus brevipes Vieillot. Grey-rumped Tattler.
Tringa nebularia (Gunnerus). Greenshank.
Tringa glareola Linnaeus. Wood Sandpiper.
Actitis hypoleucos Linnaeus. Common Sandpiper.
***Eupoda asiatica* Pallas. Caspian Plover.
**Limosa lapponica* Linnaeus. Bar-tailed Godwit. Caught and identified 26 October 1963.
Lobibyx miles (Boddaert). Masked Plover (G. F. Mees—unpublished).
***Stiltia isabella* (Vieillot). Australian Pratincole.
Glareola pratincola maldivarum Forster. Collared Pratincole.
Egretta eulophotes Swinhoe. Chinese Egret.
Egretta intermedia plumifera Gould. Plumed Egret.
Egretta garzetta nigripes Temminck. Little Egret.
Notophoyx novaehollandiae Latham. White faced Heron.
Nycticorax caledonicus hilli Mathews. Nankeen Night Heron.
Butorides striatus amaurensis Schrenck. Little Green Heron.
**Egretta alba alba* Linnaeus. Great White Heron. One bird was present on or around the golf course from 7 April to 5 June, 1962. It was not seen again until 24 January, 1963 and this was killed by a boy on 29 January, 1963. Another single bird was seen on 2 October, 1963.
Anas gibberifrons gibberifrons S. Muller. Wood Teal.
**Falco peregrinus* Tunstall. Peregrine Falcon. One juvenile present from 27 February, to 1 April, 1962.
Chalcites basalis (Horsfield.) Bronze Cuckoo.
Hirundo rustica gutturalis Scopoli. Swallow.
Motacilla cinerea melanope Pallas. Grey Wagtail.
Motacilla flava simillima Hartert. Blue-headed Wagtail.
Anthus campestris striolatus Blyth. Tawny Pipit.
Aethiopsar grandis javanicus Cabanis. Javan Jungle Myna.
Gracula religiosa religiosa Linnaeus. Grackle.
**Eurystomus orientalis* Linnaeus. Broad-billed Roller. One bird was present near the north east coast from 28 January till 2 February, 1963.

*_Halcyon chloris_ Boddaert. Mangrove Kingfisher. Single birds were seen on the following dates, 8 May, 6 June and 20 September, 1962, and on 26 September, 1963.

*_Lanius cristatus_ Linnaeus. Brown Shrike. One seen on 7 April, 1962.

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The eggs of the White-tailed Blue Chat, *Cinclidium leucurum*, and the Large Niltava, *Niltava grandis*

by C. J. O. HARRISON and S. A. PARKER

Received 25th October, 1965

E. C. Stuart Baker (1933) stated that the eggs of the White-tailed Blue Chat, *Cinclidium leucurum*, and those of the Large Niltava, *Niltava grandis*, were very similar and could only be told apart when compared in series. An examination of the eggs of these species in the collection of the British Museum (Natural History) received from collectors other than Baker revealed that, although the length of the eggs was similar in many cases, the eggs of *C. leucurum* had a breadth range of 15.8–17.7 mm. and were pale with a pink tint, while those of *N. grandis* had a breadth range of 17.5–18.7 mm. and were all distinctly buff in colour (Fig. 1). When the eggs of *N. grandis* in Baker's collection were examined it was found that about half were pale pinkish with a breadth of 16.5–17.5 mm. and the

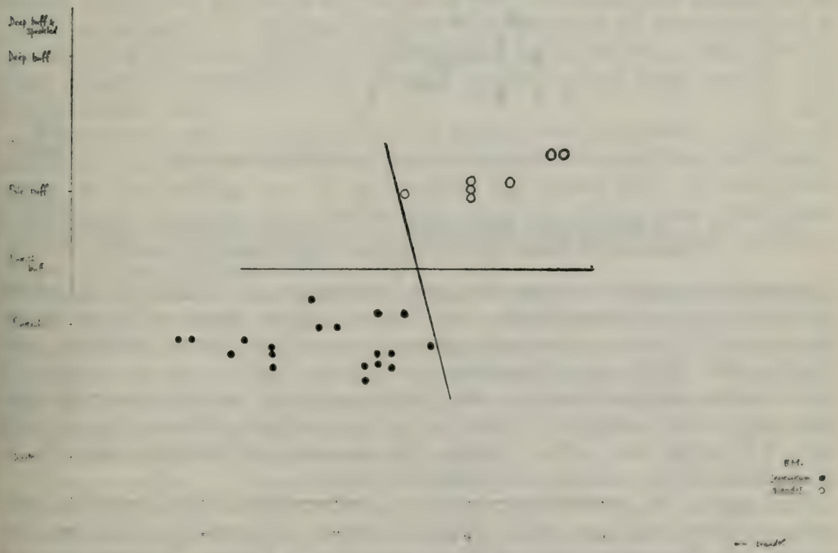

FIG. 1. Known specimens of *C. leucurum* (black spot) and *N. grandis* (open circle). Abcissa = breadth. Co-ordinate = colour.

remainder were buff with a range of 17.3–18.9 mm. (Fig. 2). When Baker's eggs of *C. leucurum* were also examined it was found that these also consisted of a number of pink eggs with a breadth range of 16.5–17.5 mm. and buff eggs with a range of 17–18.5 mm.; together with two obviously atypical buff eggs in a single clutch with breadths of 16.5 and 16.8 mm. (Fig. 2).

An examination of the skins of these birds showed that the females are extremely similar in appearance, the only obvious difference being the presence of a few blue feathers on the side of the neck in *N. grandis*. The sizes are different, *C. leucurum* being a smaller species, but they are sympatric and it would be easy to confuse the two in the field. It is most improbable that two species of dissimilar size should lay similar eggs, and that the eggs of both should consist of two distinct types—broader buff eggs, and more slender pink eggs. There is every reason to accept the evidence of other collectors and to regard the narrower pink eggs as those of *C. leucurum*, and the broader buff ones as those of *N. grandis*.

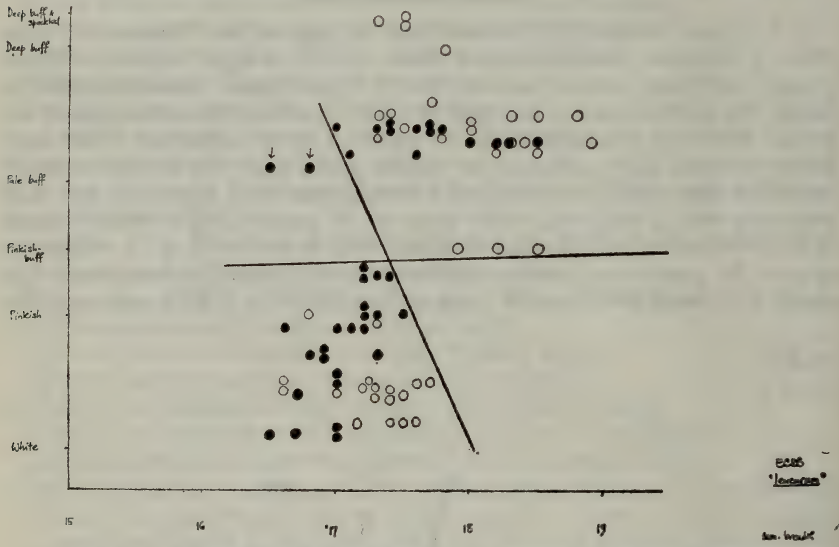

FIG. 2. E. C. S. Baker's eggs. Black spots = *C. leucurum, fide* Baker. Open circles = *N. grandis, fide* Baker. Arrows indicate a single abnormal clutch.

It would therefore appear that the information in Baker's *Nidification of the birds of the Indian Empire*, vol. 2 is inaccurate. Based on this revision, the eggs of *C. leucurum* would appear to vary from almost white to pale pink, a few of the pink eggs having a slightly buff tint, some showing a faint darker coronal band at the larger end, and more pigmented eggs showing a very indistinct indication of a speckled pattern. The average size of 65 eggs was 22.9 x 17 mm. The maxima and minima were *25.2* x 17.4, 23.6 x *17.7*: *20.7* x 16.8, 22.8 x *15.8* mm.

The eggs of *N. grandis* were pale buff, often with a finely speckled pattern of darker buff, and with a faint indication of a small coronal band on some eggs. The average size of 38 eggs was 24.7 x 18 mm. The maxima and minima were *26.7* x 18, 23 x *18.9*; *20* x 17.6, 23.2 x *17* mm.

Baker referred to differences of opinion concerning the nests of these species but this may be linked with the confusion over the eggs. The nest of *C. leucurum* appears to be a cup nest usually placed in a cavity or crevice in a bank, or among overhanging rocks or tree-roots, usually by a stream, and usually hooded or domed where the site does not provide a natural roof. The material is fibrous rootlets and dead leaves, with green moss on the outside. The size is about 5.5 inches wide and deep externally, with a cavity about 2.5 inches wide and 1 inch deep. The nest of *N. grandis* is also built into a cavity in a bank or raised structure of some kind. It is made of fresh green moss and lined with fine roots. It is a cup with external diameter of *c.* 6 inches and *c.* 4 inches deep. The inner cup is *c.* 3 inches across and 1.5 inches deep.

As with some other clutches from Baker's collection (Harrison, in press) there appears to be evidence of clutches of normal or large size having been made up from several smaller clutches, and it would appear advisable to treat Baker's data on clutch size with due caution.

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Guanay or Bougainville's Cormorant, *Phalacrocorax bougainvillii* (Lesson)

by A. W. Johnson

Received 9th November, 1965

In strictly commercial terms the Guanay Cormorant is without doubt the most valuable bird in the world, as the guano which it deposits on desert islands off the coast of Peru laid the foundation for a world-wide fertilizer industry in the past century and through its extensive use in present day Peruvian agriculture continues to represent a vital asset to that country's economy. Not without reason has it been called "The billion dollar bird".

Probably the most typical of all the birds of the Humboldt current, its centre of distribution is on the off-shore islands of central Peru on which it nests by the million and is responsible for about 85% of the guano deposited; once the reproductive cycle is over, it migrates from these islands moving south as far as Valdivia in Chile and, in lesser numbers, north to Punta Parinas in Peru.

These migrations are always confined to the cold waters of the Humboldt current, which parallels the coasts of Peru and part of Chile and presents one of the highest concentrations of organic life to be found anywhere in the world. Among its myriad forms is the "Anchovy", *Engraulis ringens*, and on this one fish the Guanay is completely dependent, a dependence which automatically regulates the entire population and hence the supply of guano from year to year.

Every so often, for reasons not yet properly understood, but which are apparently subject to cycles of approximately nine years, the Humboldt current deviates from its normal course, the temperature of the coastal waters rises, *Engraulis ringens* in its countless millions disappears and the Guanay is faced with starvation. Frantically the birds fly southwards in search of the food that is no longer there, dying by the million and strewing the Peruvian and Chilean coasts with their bodies or with birds so weak and extenuated that death is only a question of hours. The following year the population at the nesting colonies, which may have built up to as high as 30 million, shows a steep decline; naturally the quantity of guano deposited drops in proportion and Peruvian agriculture is faced with serious after effects that can only be mitigated by careful regulation of the amount to be extracted from year to year.

The last occasion when this wholesale mortality took place was the year 1957 when, in addition to hundreds of thousands of dead birds strewn along the coasts, a number of observers reported the pathetic sight of small bands of these exclusively marine birds flying up the river valleys fruitlessly searching for the food that the sea had denied them, while the author personally watched a flock flying aimlessly hither and thither among the hills behind Valparaiso and saw one bird leave the rest and pitch among the branches of a eucalyptus tree.

In recent years another serious threat to the Guanay has developed in the form of a large scale fishmeal industry in Peru which competes with the birds for the same source of supply, *Engraulis ringens*. Although careful studies are being made, nobody can say at this stage just how "inexhaustible" this supply is, but on an accurate answer depends the future of the birds, of the supply of fertilizer for Peru's sugar and cotton crops and, to a large extent, of the fishmeal industry itself.

From March or April until October or November the Guanay is present in Chilean waters in enormous numbers and is particularly in evidence when the shoals of "Anchovies" come in close to the land. On these occasions the concentration of birds around the shoals staggers the imagination. What with the cormorants on the surface or diving, the gannets and pelicans plunging from the air, the gulls hovering above and the penguins and sea lions rounding them up from below, the unfortunate "Anchovies" may be seen jumping out of the water in all directions and the sea appears to boil with living organisms in their struggle for survival. No one watching such a scene can fail to be impressed by the prodigality and at the same time the wastefulness of nature.

A white-breasted cormorant with black upper parts, head and neck, the Guanay is also noted for its manner of flight in long V-shaped formations which sometimes run into hundreds of thousands of birds and stretch from horizon to horizon. When these formations encounter an obstacle such as a passing steamer it is interesting to note how they bend in the form of an arc which becomes more and more pronounced until finally one bird, more intrepid than the rest, breaks formation and passes astern of the vessel; immediately all the others follow suit and the "V" re-forms just as if nothing had happened.

For many years it was considered more than doubtful that the Guanay nested anywhere in Chilean territory, but in 1932 the well known missionary-naturalist Dillman S. Bullock reported the presence of a colony on an islet to the north of Moch island in Lat. 37° 20′ S., adding that the eggs were collected systematically by the islanders for food. Evidently this resulted in the ultimate abandonment of the colony, for when Dr. Behn visited the island in 1962 all that remained was a wasteland of deserted cones.

In 1944 William Vogt, a conservation expert who spent three years on the guano islands of Peru studying the complete life-cycle of these birds, made an aerial survey of the islands lying off the coast between Arica and Valparaiso without finding any trace of nesting activities.

However, in March of 1946 our colleague Dr. Philippi, watching the comings and goings of Guanays and other birds with powerful field glasses from a vantage point on the coast of Cochagua province in Lat. 33° 58′ S. came to the conclusion that there must be a nesting colony on the islet of Pupuya a couple of miles off the coast. This was confirmed in June of 1955 when our oceanographer friend from Peru, Enrique Avila, managed to land on this steep islet and found indications of a colony which he estimated at 80,000 birds. The nesting season was of course over at that date, but as he moved about among the rows of unmistakable nests, young birds of the year, some of them with patches of down still on the neck and head, scattered in all directions. It can be positively stated, therefore, that this cormorant does nest in Chile.

As already mentioned, the Guanay nests by the million on the islands off the Peruvian coast. This is true from Lobos de Tierra southwards and also to a lesser extent on some of the mainland promontories where special walled-in areas have been set aside by the Government to encourage the birds to establish auxiliary colonies.

Although some nests may be occupied at any time of year, the reproductive stream reaches its peak in November and December, when a density of three nests per square metre has been recorded from some of the islands.

Three or occasionally only two calcareous pale bluish eggs are laid, measuring on average $62.7 \pm 1.36 \times 40.3 \pm 0.75$mm.; in shape and coloration they are indistinguishable from those of other cormorants.

The Eastern Least Honey-guide *Indicator meliphilus* (Oberholser) in Rhodesia

by Michael P. Stuart Irwin

Received 12th November, 1965

The diminutive honey-guide *Indicator meliphilus* (Oberholser) has until now been recorded no further south than the Port Herald district of Malawi (Long 1961: 34). However, among a recent collection of birds from near the Haroni-Lusitu River junction in the Melsetter District of Rhodesia at 20° 02′ S., 33° 01′ E., there are four specimens of the genus *Indicator*. Three of these represent the widespread *I. minor* Stephens, but the fourth proves to be an example of *I. meliphilus*. It was collected by A. F. Graham in the Haroni valley on 22nd August, 1965 at 1,300 ft. in low trees growing among scrub and grass near the edge of lowland evergreen forest. Thanks are due to Mr. A. H. Siemers, leader of the expedition of the Prince Edward School Natural History Society, of Salisbury, who made this collection of birds on behalf of the National Museum of Southern Rhodesia.

It is a female, apparently adult, with wing 76.5, tail 48 and culmen 9 mm., thus falling within the size range as given by Chapin (1962: 43–44). In colour it agrees closely with the female discussed by Long from Malawi, collected on the 16th May and said to have the skull not yet completely ossified, and with a male from Abercorn, Zambia, obtained on the 9th January, by being a rather bright golden green above on crown and mantle, with a faint greenish or yellowish wash on the underparts, though this is less noticeable in the male from Abercorn. Another male from this latter locality dated 2nd October, is however, somewhat duller, less golden green above and greyer on the under side. It more closely matches two western Zambian specimens from Kabompo Boma on 13th June and the Lisombo stream in the Mwinilunga District, on the 14th June, which are clearly separable. All the series are in fresh plumage.

Chapin *op. cit.* dismissed the race *I. m. angolensis* Monard, admitted by Friedmann (1958: 65–68), and accepted as valid by Traylor (1963: 108). The above-mentioned characters would seem to support some racial variation, though Friedmann extended the range of *I. m. angolensis* eastwards to Malawi and has written "*angolensis*" on the Malawi specimen discussed above. Larger series are obviously required before any final decisions can be reached. It may be mentioned that the duller and greyer birds, here considered as probably representing *angolensis*, are in coloration a far closer counterpart of *I. minor* than the more eastern examples of *meliphilus*.

This record constitutes a very considerable extension of the known range, extending its distribution, south of the Zambesi River, some 275 miles from Port Herald, Malawi, at the same time adding a new species to the South African Sub-region. A very brief description of the Haroni-Lusitu area is provided by Smithers (1956: 168) and the region is further discussed by Irwin (1963: 24–25). It possesses a number of unique features, with an admixture of montane and lowland avifaunal elements, to the latter of which this small honey-guide more probably belongs. It is undoubtedly more widespread than this solitary record might indicate and is certain to occur in adjacent Portuguese East Africa, from whence it undoubtedly ranges only very marginally within Rhodesian limits.

All the material mentioned in this discussion is in the collection of the National Museum of Southern Rhodesia, Bulawayo.

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The Spike-heeled Lark *Chersomanes albofasciata* in East Africa

by C. W. Benson

Received 8th December, 1965

Mr. J. S. S. Beesley, of the Tropical Pesticides Research Institute, has asked me to study a specimen of the Spike-heeled Lark collected by him in northern Tanzania. It represents an extension of known range of over 1,200 miles, from central Angola, and the species is only otherwise known in the Republic of South Africa, South-West Africa and Bechuanaland (White, 1961: 33–35). As is also to be expected, this specimen represents a very well marked subspecies, which I name:—

Chersomanes albofasciata beesleyi subsp. nov.

Type: Adult male, testes enlarged (from drawing on label about 6 x 3 mm.), from Masai Plains, 30 miles north of Arusha, northern Tanzania, collected by J. S. S. Beesley, 2nd November, 1965. British Museum (Natural History) registered number 1965.37.1.

Diagnosis: On upperside most similar to *C. a. obscurata* (Hartert), but much less dark, blackish-brown rather than near jet-black, with similar whitish margins on mantle and wing-coverts, but nape and margins on crown whitish rather than reddish, the upper tail-coverts slightly paler red. On underside, dusky streaking on chest more pronounced than in any other subspecies; in tone of russet on lower chest to abdomen much paler than *obscurata*, nearest to *C. a. kalahariae* (Ogilvie-Grant) and *erikssoni* (Hartert).

Measurements: Wing 80; tail 41; culmen from base 20; tarsus 27; hind claw 15 mm.

Colour of soft parts: Iris mid-brown, pupil dark brown; upper mandible dark grey-brown, lower pale horn; legs pale flesh.

Remarks: In the general blackish-brown tone of the upperside, *beesleyi* is much more similar to *Pseudalaemon fremantlii delamerei* Sharpe and *Calandrella rufescens athensis* (Sharpe), specimens of both of which Mr. Beesley has also collected near Arusha, than it is to any other subspecies of *Chersomanes albofasciata*. It seems also to be unusually small (wing 80 mm. only), White (1961) giving the wing-length of the male of two other subspecies, *obscurata* and *C. a. boweni* (de Schauensee), as respectively 81–89 and 81–91 mm.

Mr. Beesley is to be congratulated on this most unexpected discovery, and he realised that the specimen apparently belonged to *C. albofasciata*. He writes that on 23rd October, 1965 he was studying a large congregation of five species of larks in short grass plains 30 miles north of Arusha, among which was a party of eight birds which attracted his attention by their unusual appearance. They had the tail very short, wings rather broad, head largish, and the neck long or frequently stretched out. They were active runners, and each time they were approached by car they ran, then stopped to turn and stare, head on, occasionally bickering among themselves. The calls were unusual and wader-like, "tit, tit, titera" or "titter-titter-titter", and "tui-tui-tui-tui-tui". In flight, the white tips to the tail-feathers were very conspicuous. Subsequently, thanks to the assistance of Mr. D. Vesey-FitzGerald, he was able to collect the specimen and have it skinned. Its stomach-contents were insects, including coleopteran fragments.

I am grateful to Mrs. B. P. Hall for comparing with me the specimen of *beesleyi* with the comprehensive southern African material of *Chersomanes albofasciata* in the British Museum. She agrees with me that it is mandatory to name it.

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BRITISH ORNIT

INCOME AND EXPENDITURE ACCOUNT F

1964	Expenditure	£	s.	d.	£	s.	d.
	Bulletin Vol. 85—						
	Cost of Publication, Distribution, etc.	626	0	11			
397	*Less* Sales	194	3	11	431	17	0
46	Notices, etc. for Meetings				44	17	8
5	Audit Fee				5	5	0
5	Contribution *Zoological Record*				5	5	0
6	Expenses of Guest Speakers				7	12	9
7	Club Guests				17	11	6
20	Projectionist				10	10	0
71	Miscellaneous Expenditure and Postage				33	17	7
557					556	16	6
53	Excess of Expenditure over Income brought down				59	15	1
—	Expenses of property at Tring				805	8	0
36	Transfer to General Fund				—	—	—
89					£865	3	1

BALANCE SH

		£	s.	d.	£	s.	d.
	General Fund						
	As at 31st December, 1964	1,361	1	6			
	Less Transfer to Income and Expenditure Account	811	7	7	549	13	11
	Bulletin Fund:						
6	Donations from Members				6	1	0
136	Subscriptions 1966 paid in advance				87	6	10
—	Loan from Miss C. M. Acland				750	0	0
58	Creditors				73	5	0
1,561					£1,466	6	9
	Trust Fund: (The Capital of this Fund may not be used. The Income from it is General Revenue.)						
1,000	F. J. F. Barrington Legacy				1,000	0	0
2,561					£2,466	6	9

R. S. R. Fitter, *Chairman*
P. Tate, *Hon. Treasurer*

We have examined the above Balance Sheet and Income and Expen
be in accordance therewith.

Finsbury Circus House,
Blomfield Street, London, E.C.2.
15*th February*, 1966

LOGISTS' CLUB

YEAR ENDED 31st DECEMBER, 1965

1964	INCOME	£	s.	d.	£	s.	d.
	SUBSCRIPTIONS:						
337	Members	331	5	0			
2	Associates	2	2	0	333	7	0
61	Income Tax recovered under Deeds of Covenant 1964/65				56	9	6
	INVESTMENT & DEPOSIT INCOME:						
	General Fund	58	5	3			
104	Trust Fund	48	19	8	107	4	11
504					497	1	5
53	Balance, excess of Expenditure over Income, carried down				59	15	1
557					556	16	6
12	Sales of *Scientific Index*				1	8	0
77	Sales of *Bulletin* for previous years, *less* expenses..				52	7	6
—	Transfer from General Fund				811	7	7
89					£865	3	1

DECEMBER, 1965

		£	s.	d.	£	s.	d.
	GENERAL FUND, INVESTMENTS:						
	£1,000 4½% Defence Bonds, at cost	1,000	0	0			
	£100 3% Savings Bonds 1960/70, at cost ..	100	0	0			
		1,100	0	0			
1,080	*Less* Reserve	20	0	0	1,080	0	0
	(Market Value 1965: £1,085) (Market Value 1964: £1,084)						
1	PROJECTOR, LANTERN & SCREEN—Nominal Value				1	0	0
1	STOCK OF *Bulletin*—Nominal Value				1	0	0
	No value has been included for the stock of the Scientific Index						
—	SUNDRY DEBTOR:				26	0	0
479	CASH AT BANK AND ON DEPOSIT:				358	6	9
1,561					1,466	6	9
	TRUST FUND INVESTMENT:						
1,000	£1,399 11*s.* 0*d.* 3½% War Stock				1,000	0	0
	(Market Value 1965: £748) (Market Value 1964: £763)						
2,561					£2,466	6	9

nt with the books and records of the club and Certify them to

W. B. KEEN & Co.,
Chartered Accountants.

British Ornithologists' Club

REPORT OF THE COMMITTEE

FINANCE

The year 1965 was dominated financially by the expenses incurred on the bequeathed property at Tring. When the Committee on behalf of the Club accepted the bequest, we were told that we should also receive approximately £1,000 which would have enabled us to put it in a reasonably satisfactory state and still left us in pocket. At a very late stage the Trustees informed us that we would not receive the £1,000: after careful consideration the Committee decided that in the long run the property would be an asset, and a source of income to the Club. We had therefore to go ahead with what we had, and thanks to the most kind generosity of Miss C. M. Acland, who made the club a loan of £750, we have been able to put the house in a good state of repair for the sum of £805 8*s.* 0*d.* During the coming year the Committee propose to reimburse Miss Acland from the General Fund investments, and then with a steady income from the rent we hope to rebuild the fund. During 1965 the Expenses of the Club remained almost the same, although total income fell by approximately £43 due in the main to slightly lower sales of old *Bulletins*, and the sale of only two copies of the *Ten Year Scientific Index*. The tax recovered from seven year covenants was also £4 lower due to deaths and broken covenants. Unfortunately, the cost of printing the *Bulletin* this year will rise due to increased printing charges, but largely due to the income from the house there will be no increase in subscriptions.

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CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Mr. John Yealland, The Zoological Society of London, Regent's Park, London, N.W.1. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

Contributors are entitled to a maximum of thirty free copies of the *Bulletin*, supplied only as specifically requested by authors. Those contributing to a meeting should hand in their MS. at that meeting; otherwise a note will be inserted mentioning the contribution.

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, Mr. Martin W. Woodcock, 34 Hill Road, Theydon Bois, Essex.

DINNERS AND MEETINGS FOR 1966

19th April, 17th May, 20th September, 18th October, 15th November and 20th December.

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JOHN J. YEALLAND

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1966

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BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB

Volume 86
Number 5
Published: 2nd May 1966

The six hundred and thirty-fourth meeting of the Club was held at the Rembrandt Hotel, London, on the 19th April, 1966.

Chairman: Mr. R. S. R. Fitter

Members present: 13; Guests 4.

Mr. Peter Olney gave an illustrated talk on the feeding biology of seven species of duck during winter on the Medway estuary.

Coracias abyssinica: an unrecorded host of *Indicator indicator*

by Shane A. Parker

Received 18th November, 1965

Among the eggs collected by R. Shuel in Nigeria, and now in the collection of the British Museum (Natural History) there is a clutch of eggs which constitutes a new host record for the Black-throated Honeyguide, *Indicator indicator*. The data for this clutch, from Shuel's MS notebook, are as follows: "Abyssinian or Senegal Roller, *Coracias abyssinica*. 4 eggs, slightly incubated, taken from a Dorowah tree on the golf course at Zaria on 13 April 1934. The eggs were in a natural hole in the tree about 20 feet above ground. The hole was too small to admit the hand of the native I sent up to collect the eggs and he had to hack his way in. It is remarkable that one of the eggs in this clutch is only about half the size of the others. This egg was also hatching, however." These eggs (B.M. reg. no. 1945.3.185) measure 31.25 x 25.5, 30.5 x 24.5, 31.5 x 25 and 23.5 x 18.5 mm., and are all glossy white. The fact that the small egg was at the same stage of incubation as the other three indicates that it was not an abnormally small, thus infertile, egg of the roller. It agrees exactly with the eggs of *Indicator indicator*, which also occurs in the area. According to Friedmann [The Honeyguides, *U.S. Nat. Mus. Bull.* 208 (1955): 1–292, and pers. comm., 1965] no member of the Coraciidae has hitherto been reported as host to a honeyguide.

Geographic variation in Winchell's Kingfisher *Halcyon winchelli*, of the Philippines

by Kenneth C. Parkes

Received 20th December, 1965

Winchell's Kingfisher, *Halcyon winchelli*, is an endemic Philippine species belonging to a group of colourful forest kingfishers of the East Indies. It is restricted to the islands of the southern and central portions of the Philippine archipelago. Current literature generally treats it as a monotypic species; Peters (1945) listed *H. w. nigrorum* Hachisuka as "doubtfully distinct," and earlier (1939) had said that Hachisuka's description used "characters that will hardly stand up in a series" (although Peters apparently had before him only a single specimen of the species). All authors have considered *Halcyon alfredi* Oustalet, described from Bongao Island in the Sulu archipelago, to be a synonym of *winchelli*; Sharpe (1892) commented that the alleged differences between *alfredi* and *winchelli* were probably sexual, not geographical.

This is not a common species in collections. I have assembled a series of 45 specimens, representing every island from which the species has been reported, with the single exception of Siquijor. This relatively small series suffices to show that *Halcyon winchelli* varies geographically in the Philippines, with no less than five subspecies being recognizable.

Adult males of Winchell's Kingfisher are pure white below; females are more or less heavily washed with buff (varying geographically). Young males, if sex marks on labels are accurate, may have varying amounts of buff on the underparts. The central part of the crown, the wings and the back are essentially black, more or less overlaid with blue. Adult males have a more extensive wash of a brighter blue than do females. Young birds of either sex are dull black, with or without a blue wash, on the back and centre of crown (this being a geographically variable character). The area between the blue hind margin of the crown and the buff nuchal collar is black in all juveniles examined, even of the bluest-backed populations. The nuchal collar itself is usually of a paler buff in young birds; the wider collar attributed to females by McGregor (1909) and by Delacour and Mayr (1946) is an artifact of preparation; there is much individual variation in the width of this collar, but no correlation with sex is seen when similarly prepared specimens are compared. In at least some of the populations, males appear to average somewhat shorter in wing and tail than females. The wing was measured flat against the ruler; the bill measurement is that of the culmen from the anterior edge of the nostril. All measurements are in millimetres (to the nearest .5 mm.), and only adult birds were measured.

The five subspecies recognized are as follows:

Halcyon winchelli winchelli Sharpe.

Halcyon Winchelli Sharpe, Trans. Linn. Soc. London (2), 1, 1877, p. 318 (Isabella [=Isabela], Basilan).

Characters: females with rich buff underparts; longer-winged than other races; crown as well as dorsum of juvenile dull black without blue wash.

Measurements: wing, ♂ 102, 104; ♀ 105, 106, 107, 108. Tail, ♂ 72, 73; ♀ 74,5, 75.5, 76.5, 78. Bill, ♂ 42, 44, 48 (the latter specimen appears to have an abnormally long bill-tip); ♀ 43, 43, 43, 45.

Specimens examined: Basilan, 13.

Halcyon winchelli mindanensis, subsp. nov.

Type: Chicago Natural History Museum no. 215257, adult male, collected at Matam, Katipunan, Zamboanga Province, Mindanao, Philippines, 29th May, 1952, by D. S. Rabor (collector's no. 2896).

Characters: sex for sex, brighter blue dorsally than *winchelli*, especially noticeable in males; subocular and ear-covert regions with more blue and less black; wing decidedly and tail somewhat shorter than *winchelli*; underparts of females like those of *winchelli* in colour; juvenile with both crown and dorsum washed with blue; wing-coverts of juvenile brighter and more extensively blue than in *winchelli* or the next two races.

Measurements: wing, ♂ 97, 98; ♀ 98.5, 99, 101, 103. Tail, ♂ 70, 73; ♀ 72, 72, 74, 75. Bill, ♂ 42.5, 43, 44; ♀ 40.5, 43.5, 44.

Specimens examined: Mindanao, 8.

Remarks: The measurements of one adult male (U.S. Nat. Mus. no. 191458), allegedly from Mindanao, have not been included above, as the label data appear to be questionable. The specimen was apparently given to Mearns; in the latter's handwriting, the label states "Collected by Mr. M. L. Robb at Zamboanga." A later hand has added a question mark, together with the qualification "Probably from near Zamboanga." Both in colour and in size (wing 101, tail 77) this specimen is typical of *winchelli*, and I suspect that it was actually collected in Basilan, which is near the Zamboanga region of Mindanao.

Halcyon winchelli alfredi Oustalet

Halcyon alfredi Oustalet, Le Naturaliste, 1890, p. 62 [not seen] (Bongao).

Characters: nearer *mindanensis* than *winchelli* in blueness of upperparts, ear-coverts, etc.; juvenile with blue wash on black of crown but not of dorsum; adult females with much paler buff underparts than either of the preceding two races; wing averaging between those of *winchelli* and *mindanensis*, but tail averaging longer than either.

Measurements: wing ♂ 100, 101, 101.5; ♀ 101, 103, 104. Tail, ♂ 74, 75, 75.5; ♀76, 78, 81. Bill, ♂ 43, 43, 43.5; ♀ 42, 42.5, 43.5.

Specimens examined: (all from Sulu archipelago) Tawi-Tawi, 3; Bongao, 2; Papahag, 1; Sulu, 1.

Halcyon winchelli nigrorum Hachisuka

Halcyon winchelli nigrorum Hachisuka, Birds of the Philippine Islands, pt. 3, 1934, p. 142 (Canloan Volcano, Negros).

Characters: Females like *winchelli* and *mindanensis* below, but both sexes with more black, less blue on crown, dorsum, and sides of face; blue of sides of crown and nape deeper; males with conspicuous patch of black (or black mixed with blue) at sides near bend of wing (wholly or mostly concealed in other races); wing and tail length about as in *mindanensis*, but bill shorter than in any other race; juvenile female with no blue on dorsum and little on crown; juvenile male with trace of blue on dorsum and much blue on crown.

Measurements: wing, ♂ 96, 97, 98, 98, 99, 99, 102; ♀ 97.5, 100.5, 101. Tail, ♂ 68, 70, 71, 71, 71.5 71.5, 72; ♀ 68, 73.5, 76. Bill, ♂ 35, 37.5, 39, 39.5, 39.5, 41, 42 (the latter specimen, like the longest *winchelli*, appears to have an abnormally long bill-tip); ♀ 40, 41, 41.

Specimens examined: Negros, 4 (including type); Bohol, 5; Samar, 1; Leyte, 1; Cebu, 1.

Remarks: The characters of this subspecies appear best developed in Negros, from which island came the shortest-billed specimens. Bohol material is close to that from Negros, and can be assigned to *nigrorum* with some confidence; that from Samar, Leyte and Cebu is less satisfactory. However, these specimens are not incompatible with *nigrorum*, and geographically variable birds from Samar and Leyte usually resemble Bohol birds most closely. Specimens from Siquijor, just off Negros, will undoubtedly be found to belong here as well. Delacour and Mayr (1946) are the only authors to list Leyte in the range of *Halcyon winchelli*; the basis for this is unknown, as a specimen (Am. Mus. Nat. Hist. no. 768287, juvenile female) collected at Barrio Patok, Dagami, Mt. Lobi, by G. Alcasid and M. Celestino on 19th July, 1961, appears to be the first actual record for Leyte. Rabor (1959) documented the disappearance of forest birds on the island of Cebu, and believed that deforestation had accounted for the extinction on that island of several species, including endemic forms. No mention was made (either in the list of forest birds seen or of those sought in vain) of *Halcyon winchelli:* its habitat is such that this species may well be among those extirpated on Cebu.

Halcyon winchelli nesydrionetes, subsp. nov.

Type: U.S. National Museum no. 314948, adult female, collected at "Badajos" (=Badajoz), Tablas Island, Philippines, 18th September, 1892, by D. C. Worcester and F. S. Bourns (collectors' no. 855).

Characters: underparts of females unlike those of any other race; paler, in general, even than *alfredi*, with throat and abdomen whitish, but with the lower cheeks and breast bright orange-buff, the latter forming a rather distinctly contrasting breast band; colour of upperparts, ear-coverts, etc., much as in the geographically remote *winchelli*, and males not certainly separable from that race (although the measurements suggest that in series, *winchelli* would probably average rather longer-winged); bill decidedly longer than in *nigrorum*, the geographically nearest race. One apparently juvenile bird from Romblon, sexed as female, has the orange-buff breast band even more clearly defined than in adult females. It has almost as much blue on the crown as an adult, but has the typical juvenile black band anterior to the buff nuchal collar. There is only a trace of blue wash on the black subocular and ear-covert regions, but the dorsum and wings are exceeded in blueness among juveniles only by the Mindanao specimen.

Measurements: wing, ♂ 100, 104; ♀ 100, 103.5. Tail, ♂ 72, 74; ♀ 70, 75. Bill, ♂ 44, 45; ♀ 44, 45.

Specimens examined: Romblon, 3; Tablas, 1; Sibuyan, 1.

Summary of principal diagnostic characters of subspecies of *Halcyon winchelli.*

Subspecies	Underparts of ♀	Blueness of adult dorsum	(1) crown and (2) dorsum of juvenile	Distinctive size character, if any
winchelli	rich buff	blue	(1) black (2) black	longest wings
mindanensis	rich buff	bright blue	(1) blue (2) blue	—
alfredi	pale buff	intermediate between above	(1) blue (2) black	longest tail
nigrorum	rich buff	least blue	(1) blue (2) black to blue	shortest bill
nesydrionetes	whitish with buff breast band	blue	(1) blue (2) blue	—

Remarks: although only a very small series was available of this subspecies, I do not hesitate to give it a name, as it is so different from *nigrorum*, the geographically nearest race. The three islands of Romblon, Tablas and Sibuyan are zoogeographically related (McGregor, 1920). They are separated from the range of *nigrorum* by the relatively large islands of Panay and Masbate, from neither of which *Halcyon winchelli* has been reported. The present subspecies is thus not only the northernmost population of the species, but appears to be somewhat isolated. The name chosen is from the Greek *nesydrion*, diminutive of *nesos*, "island", and *naetes*, "inhabitant," reflecting the fact that the subspecies is known only from three relatively small Philippine islands.

ACKNOWLEDGEMENTS

Taxonomic study of an uncommon bird such as *Halcyon winchelli* would be impossible without the generous co-operation of the curators of several museums. My institution, Carnegie Museum, has five specimens of this species (1 *alfredi*, 1 *nigrorum*, 3 *nesydrionetes*); the remainder were borrowed as follows: U.S. National Museum, 15; American Museum of Natural History, 12; Chicago Natural History Museum, 8; collection of S. Dillon Ripley, 3; Peabody Museum of Natural History at Yale University, 2. Travel to other museums was partly supported by a grant from the Chapman Memorial Fund of the American Museum of Natural History.

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Further systematic notes on Mexican birds

by ALLAN R. PHILLIPS

Received 8th November, 1965

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These notes deal chiefly with new races found during my work on the distribution, ecology and migrations of birds on the Pacific slope of central and southern México, especially in south-western Oaxaca. Lewis D. Yaeger and I began studies in Nayarit in November 1952, which I extended in 1959 to the Guatemalan border. By early 1965 I had probably obtained 3,800 birds from this area (inland for the first mountain range or two from the coast), from our work and that of others. A number of these have been compared with critical fresh-plumaged specimens from other collections, as acknowledged below.

On the avifauna of south-western Oaxaca

Unlike the surrounding regions of Guerrero and the Isthmus of Tehuantepec, the mountains and coast south of the Valley of Oaxaca had been explored but casually. Early workers—Boucard, Rébouch, Nelson and Goldman, *et al.*—did not collect many birds, though several novelties were described. I first camped here on 29 November 1961 on the Río Molino, a small stream at 2,250 metres elevation below San Miguel Suchixtepec, a village near the summit north of Pochutla. A small collection made from here down to foot the of the mountains included some forms usually associated with rain-forests of the Caribbean slope and some rather striking novelties like *Amazilia violiceps wagneri* (Phillips, 1965). Next spring I guided J. Stuart Rowley to this area and showed him several nests of *Catharus occidentalis* in a spot where, as he proved, *C. frantzii* (synonymized by Hellmayr, A. H. Miller, and Ripley) breeds sympatrically (*cf.* Rowley and Orr, 1964). Rowley later guided me into a more western section, where we found yet another striking novelty, *Eupherusa cyanophrys* Rowley and Orr, 1964. I returned here in November, 1963; and thanks to the aid of W. J. Schaldach, Jr., was able to work both this area and the Rio Molino the next autumn.

Besides the marked endemism, south-western Oaxaca has the usual mixture of birds extending into it from adjacent areas. My specimens, over 1,100 (more than 1,000 being fall-taken), show a basic resemblance to the birds of Guerrero, to the west; but besides the endemics, I have such Caribbean forms (unknown from Guerrero) as *Dromococcyx phasianellus* (a rectrix only), *Amazilia candida* and *Rhynchocyclus brevirostris.* Likewise the local *Euphonia* (''*Tanagra*'') *affinis* is not the white-vented *godmani* of Guerrero and west. Caribbean forms, rare or absent in Guerrero, that winter in or below the lower mountains are *Muscivora forficata, Empidonax flaviventris, Contopus mesoleucus* (''*Nuttallornis borealis*''), *Dumetella carolinensis**. *Vireo flavifrons, Helmitheros vermivorus, Helminthophila* (''*Vermivora*'') *peregrina, pinus,* and *chrysoptera**, *Dendroica magnolia**, *dominica**, and *pensylvanica, Oporornis formosus, Icteria v.*

virens and *Icterus g. galbula**. Of special interest are *Buteo brachyurus**, here one of the least scarce *Buteos*; *Amaurospiza concolor;* and the occurrence of *Pipilo albicollis* near the top of the highest mountains, with and even above the two forms of *P. erythrophthalmus*! Among northern species at their southern limits, necessarily, may be mentioned *Meleagris gallopavo** (which I am told persists locally), *Campylorhynchus jocosus* (well within the pine belt) and *Geothlypis nelsoni.* Here at their eastern limits, in winter, are several humming-birds (including *Stellula calliope*), *Trogon elegans ambiguus*, *Vireo atricapillus*, *Wilsonia pusilla chryseola*, *Icterus cucullatus**, *Molothrus ater**, and *Spiza americana** (discontinuous; see Phillips, 1962b.). Notable absentees, which I have not found anywhere in the region, include *Crypturellus cinnamomeus*, several hawks, owls, woodhewers, and swallows, "*Aphelocoma*" *unicolor*, *Pheucticus chrysopeplus*, *Carduelis* ("*Spinus*") *pinus* and most grassland birds.

Abbreviations and acknowledgments

Under each species, the following abbreviations (mostly concordant with the *Index Internationalis Herbariorum*) show additional museums from which specimens were examined (besides the Instituto de Biología, Universidad Nacional Autónoma de México, used freely throughout):

AMNH	American Museum of Natural History, New York City
CAS	California Academy of Sciences, San Francisco
CM	Carnegie Museum, Pittsburgh, Penna.
CU	Cornell University, Ithaca, New York
F	Chicago Natural History Museum
GMS	George Miksch Sutton collection, University of Oklahoma, Norman
HCL	Guatemalan collection of Hugh C. Land, Natchitoches, Louisiana
KANU	University of Kansas Museum of Natural History, Lawrence
LA	Dickey collection, University of California, Los Angeles
LDY	Nayarit collection of Lewis D. Yaeger, Tepic
LSU	Louisiana State University Museum of Zoology, Baton Rouge (including the W. J. Sheffler collection)
MCZ	Museum of Comparative Zoology at Harvard University, Cambridge, Mass.
MICH	University of Michigan Museum of Zoology, Ann Arbor
MIN	Minnesota Museum of Natural History, University of Minnesota, Minneapolis
MSU	The Museum, Michigan State University, East Lansing
RSC	Richard S. Crossin collection, Tucson, Arizona
RTM	Moore Laboratory of Zoology, Occidental College, Los Angeles, Calif.
US	United States National Museum, Washington, D. C.
WF	Western Foundation of Vertebrate Zoology, Los Angeles, California (including the Eizi Matuda collection)
YU	Peabody Museum of Natural History, Yale University, New Haven, Conn.

I am deeply indebted to the curators and owners of these collections for making my work possible, and especially to Dr. J. W. Hardy for countless courtesies at the incomparable Moore Laboratory; to the Organization of American States Fellowship Program for support of the 1959–1960 field work; to the authorities of the Frank M. Chapman Memorial Fund of the American Museum of Natural History for making possible my work there; to Dr. R. F. Johnston for aid at the University of Kansas Museum of Natural History; and to Dr. Robert W. Dickerman, J. Stuart Rowley, Wm. J. Schaldach, Jr., Dr. Dwain W. Warner, and Lewis D. Yaeger for all-important help in the field. Countless others helped in various ways; and further comparisons were made for me by J. L. Bull (AMNH), Dr. R. W. Dickerman (several museums), Dr. J. W. Hardy (RTM), C. J. O. Harrison and J. D. Macdonald (British Museum, Natural History), Mrs. Roxie C. Laybourne and Dr. L. L. Short, Jr. (US), Dr. K. C. Parkes (several museums), Dr. R. A. Paynter, Jr. (MCZ), and Dr. R. W. Storer (MICH).

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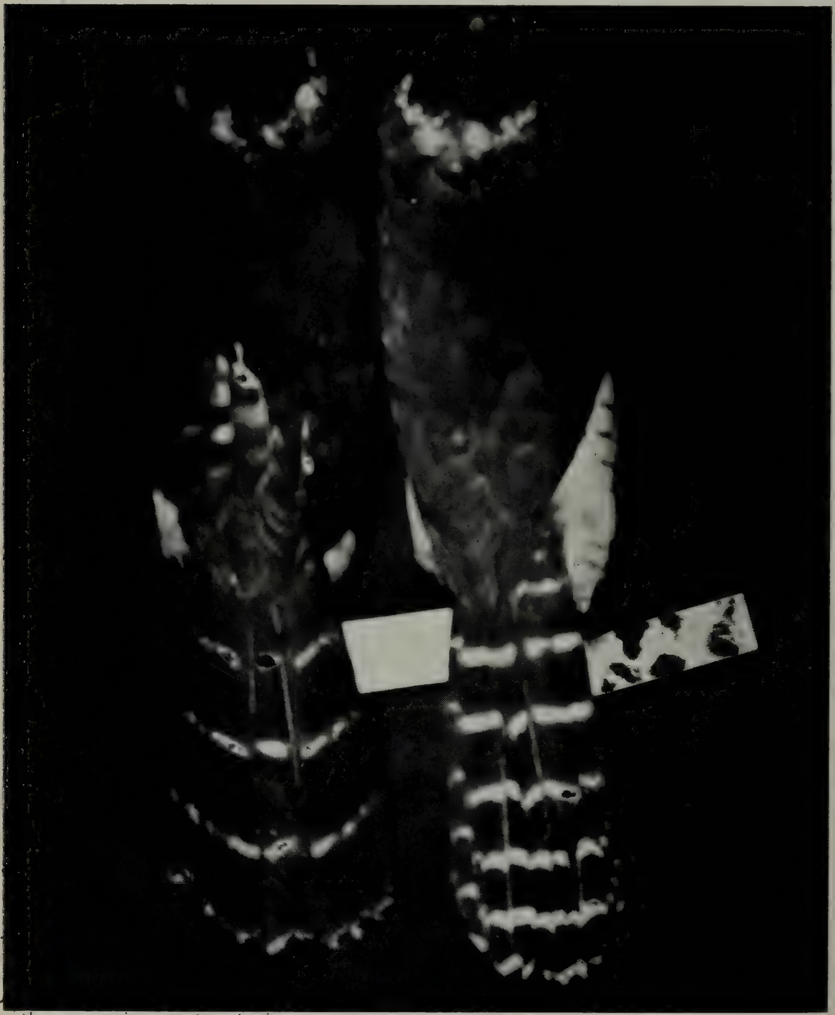
*Species marked with an asterisk are sight records, and no specimens were obtained, though *Icterus g. galbula* was common.

Collecting permits were granted by the Depto. de Caza, Dirección General Forestal y de Caza, México, D. F. For aid with illustrations I thank Gonzalo Gaviño T. and William López-Forment C.

Species are discussed in the well-known Gadow—Ridgway—Wetmore sequence, generally. Length and extent (wing-span) are extreme measurements taken in the flesh; "wing" is the unflattened *chord.* Unless otherwise implied, the bill was measured from the anterior end of *nostril* (or operculum in some cases) to tip; measurements of types are in their respective order; colours are of recently taken fall plumages; and types are in my collection (on deposit at the Instituto de Biología, Universidad Nacional Autónoma de México, México, D. F.) These have only my original field catalogue numbers, which are accordingly listed.



Micrastur ruficollis (imms)
guerilla—darker; less white in tail.
oaxacae—paler; more white in tail (= cotype)

Micrastur ruficollis (Vieillot), 1817

In northern Central America, this little falcon is reported only once (in winter on Mt. Cacaguatique, El Salvador) on the Pacific side, beyond the general statement that it inhabits all lowland forests in Chiapas (Alvarez, 1959). Two females taken at and above San Gabriel Mixtepec, municipio de Juquila, Oaxaca, thus mark a notable extension of range, and from my studies (MCZ) and other information received appear to represent a new race:

Micrastur ruficollis oaxacae subsp. nov.

Description: Similar to *M. r. guerilla* Cassin, 1848: near Xalapa, Veracruz, of the Caribbean slope, but paler above and with more white in the tail. Adult ♀ less brownish, the crown, nape, sides of neck, and broad terminal margins of feathers of anterior third of interscapulars Deep Neutral Gray (Capitalized colours from Ridgway, 1912), contrasting to browner auriculars; throat (medially) whitish, and abdomen almost wholly white (barred only anteriorly); ventral bars paler fuscous, less dusky, and narrower than the intervening white spaces (*ca.* 1 mm. wide or less, *vs.* 1.2–1.5 in *guerilla*, in which they are about equal to, or wider than, the pale spaces on the chest); rump, upper tail-coverts, and tail also paler and greyer than ♀ *guerilla* (not Sepia or Mummy Brown, though less neutral or bluish grey than crown and nape).

Immature ♀, contrariwise, browner than young *guerilla:* back pale Mummy Brown. Tail with *six* broad white bars, *ca.* 3.2–4.7 mm. wide on dorsal surface of central feathers (fig. 1); rectrices narrow. Cheeks pale anteriorly, the dark colour restricted to the posterior edge and paler, less dusky. Rump, upper tail-coverts, and remiges also paler and more definitely brownish (*i.e.* more rufescent).

Types: ♀ imm., ♀ ad., orig. nos. 7062, 8034; 1 km. W. of San Gabriel Mixtepec, and Km. 183, near top of hhigest ridge to north (below San Juan Lachao, Pueblo Viejo), south-western Oaxaca (*ca.* lat. 16° 5–13′ N. long. 97° 7′ W.), 22 Nov. 1963 and 1 Dec. 1964; collected by Juan Nava S. (7062 prepared by Santos Farfán B.).

Measurements of types: Immature, wing 162.5, tail 169; adult, wing 167.5 and 169, tail 163.5 mm. Length in flesh, respectively, 363 (—?), 360; extent (wingspread) 541, 554 (—).

Remarks: The fine barring of an adult from El Triunfo, Chiapas (*fide* Bull) suggests that *oaxacae* may extend south-eastward along the Pacific slope beyond Oaxaca.

Dendrortyx macroura (Jardine and Selby), 1828

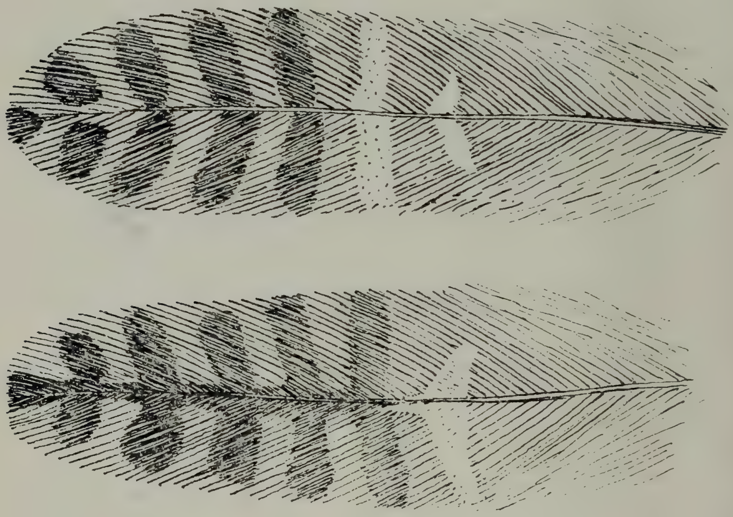
My armament was too light, even at about 3 metres distance, for these large quail, which are common in the higher mountains of south-western Oaxaca. My single specimen is quite distinct, yet shows no approach to *D. leucophrys* of the mountains to the east in Chiapas. It may be known as

Dendrortyx macroura inesperatus subsp. nov.

Description: nearest to *D. m. striatus* Nelson, 1897: mountains near Chilpancingo, Guerrero; but with the distinctly white superciliary and malar stripes, and the clear grey (near Pale Neutral Gray) sides of the feathers of the chest and upper back, in stronger contrast to the dark (Bay) colour of the median parts of the feathers of the chest, back, nape, and broad stripes on the sides and broad tips of the crest feathers; Bay area of centres of tertials reduced in size; rump and upper tail-coverts apparently sootier brown, less pale greyish. From *D. m. oaxacae* Nelson, 1897: Totontepec, eastern Oaxaca, as described and as represented by a Cerro San Felipe ♀ (RTM), it differs in whiter head-stripes, darker Bay (particularly on crown), producing greater contrast; bill narrower at base (13 *vs.* 15 mm.).

Type: orig. no. 7807 ♂, Río San Marcial below San Miguel Suchixtepec, municipio de Miahuatlán, Oaxaca (*ca.* lat. 16° 5′ N. long. 96° 26′ W.), 15 Nov. 1964; collected by Faustino Antonio R.; prepared by Juan Nava S.

Measurements of type: Length 390; wing 158 (+; moulting); tail 140.5 (+? central pair missing).



Flank feathers of the type *Cyrtonyx m. rowleyi.*

Cyrtonyx montezumae (Vigors), 1830

Nelson (1902) figured a ♂ from this area as *sallaei*, to illustrate its distinctness from *merriami*. Recent acquisition of several of these rarely collected birds, from both Guerrero and Oaxaca, shows that their variations are not due to age nor individual in nature, thus permitting recognition of

Cyrtonyx montezumae rowleyi, subsp. nov.

Description: even darker than *C. m. sallei* J. Verreaux, 1859: "Mexico" [= Guerrero] in ♂: chestnut markings (except mid-ventrally) darker, the spots on sides and flanks widening, more bar-like (fig. 2); whitish spots on sides of chest more suffused with brown; facial pattern less marked, the white duller (obsolete at front of eye); the grey of lower auriculars paler; bill smaller.

Type: original no. 7854 ♂ ad.; data same as *Dendrortyx m. inesperatus* (*supra*) but 17 Nov. and prepared by Santos Farfán B.

Measurements of type: Length 234; wing 119; bill 8.0 mm.

Remarks: the type and a juvenal ♂ from the same region agree with Nelson's ♂ and apparently with a juvenal ♂ from Cerro San Felipe, to the north (*fide* Short). A ♀ from the more arid north base of the type range, near Miahuatlán, has a small bill, but is pale; no ♂♂ were taken here.

The race is dedicated to my friend J. Stuart Rowley, master quail- and swift-hunter as well as truly scientific oölogist, to whom I am indebted for much help.

Glaucidium brasilianum (Gmelin), 1788

This abundant bird (AMNH, CM, CU, LDY, MIN, RTM, WF)*, like other owls, presents serious taxonomic problems: colours are fugitive, and owls taken after early January are often of limited value. Further, there are here (1) 4 colour phases, plus intermediates, and (2) apparent micro-geographic variations in Central America. The Pacific slope birds, south of northern Nayarit, present no notable peculiarities; but constancy of colour tones over extensive regions warrants recognition of

Glaucidium brasilianum intermedium, subsp. nov.

Description: darker above than *G. b. cactorum* van Rossem, 1937: between Guaymas and Empalme, Sonora; but paler than both *G. b. ridgwayi* Sharpe, 1875: Mérida, Yucatán, by designation of Brodkorb, 1941: 3–4, and *G. b. saturatum* Brodkorb, 1941: Finca Esperanza, [Escuintla,] Chiapas; averaging slightly larger than *ridgwayi* but slightly smaller than *saturatum*.

Distribution: Pacific coast of México from type locality south and east to at least 21 km. E. of Juchitán, Oaxaca.

Types: original nos. 2912 ♂ ad., 2954 ♂ imm., and 2955 ♀ imm., all from "Pie de la Cuesta" at the junction of two rivers 14.5 km. by road east of Las Varas, Nayarit (*ca.* lat. 21° 12′ N. long. 105° 3′ 10″ W.), 10, 19, and 19 Nov. 1952. Collected by A. R. Phillips.

Measurements of types: respectively, length 182, 179, 185; extent (355 ±), 355, 363; wing 89.3±, 90.5, 92.3; tail 62.7, 63.5, 65.4 mm. Weights 62.25, 63.1—grammes.

Material examined: extensive series from all coastal states except Michoacán.

Remarks: Birds from San Blas, Tepic, and Compostela, Nayarit, are nearest *cactorum*. Others from Nejapa, south-eastern Oaxaca, (RTM) are

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*Listing of a museum, especially CAS, CM, CU and MIN, does not necessarily imply that *all* pertinent material in its collections was examined or compared. Where several museums are acknowledged, it was rarely possible to compare all of them at one time.

also pale; and when fall specimens become available, *cactorum* may prove to range throughout interior Oaxaca and the Balsas Basin. Similarly, *intermedium* may range through central Chiapas into parts of northern Guatemala, whence two from Progreso (AMNH) are notably pale, particularly on the crown.

The intermediate colour phase is commonest in *intermedium*, with pale red birds common in eastern Oaxaca only. I have one grey bird (tail dark, with fine white bars) from west of Tehuantepec, Oaxaca. The fourth phase, apparently restricted to westernmost Jalisco, is also dark and grey, but the tail resembles the normal intermediate phase except for whitish instead of rufous cross-bars. (These may become white in the intermediate phase with *wear*, but rufous tones usually persist in protected parts near the shaft.) Age may be a factor: in the Las Varas series, two adults are decidedly paler and redder than five immatures; but this does not hold throughout the species, for some series reverse the difference, and sometimes old and young seem alike.

Chaetura vauxi (J. K. Townsend), 1839

(AMNH, CAS, GMS, LDY, MICH, MIN, RSC, RTM, US). Even recently the conspecificity of *vauxi* and *gaumeri* Lawrence, 1882: Yucatán, has been questioned (Eisenmann, 1955). But all races are much alike in field and museum. Furthermore *tamaulipensis* Sutton, 1941: near Gómez Farías, south-western Tamaulipas, a pale race much like *vauxi*, grades toward the dark *gaumeri* group down the Pacific Coast through

Chaetura vauxi warneri subsp. nov.

Description: nearest *tamaulipensis* but darker above, particularly the crown, accentuating its contrast to the pale rump. Whitish supraloral line of *vauxi* and (often) *tamaulipensis* obsolete or absent.

Distribution: mountains of Pacific México between Bahía de Banderas, Jalisco, and the Isthmus of Tehuantepec, Oaxaca.

Types: in Richard S. Crossin's and my collections (one will be deposited in U.S. National Museum); ♂♂ 3 km. W. of San Gabriel Mixtepec, Juquila, Oaxaca, 30 and (2) 31 March 1965; collected by R. S. Crossin (original nos. 1270–1272).

Measurements of types: wing 108.7–112.5 [+; some wear]; tail 38–41 mm.

Material examined: also two specimens from westernmost Jalisco (El Refugio Suchixtlán, near Cabo Corrientes), late May 1954, and a near-topotype.

Remarks: this race is dedicated to Dr. Dwain W. Warner, expert and enthusiast on Mexican birds, who (with me) collected the first specimens. Though these are not as dark as the Oaxaca birds, recognition of two races in south-western México seems undesirable. (*to be continued.*)

On movements, and a roost of the African Pied Wagtail, *Motacilla aguimp vidua* Sundevall

by C. R. S. Pitman

Recived 20th December, 1965

With reference to K. E. L. Simmons' notes on the White Wagtail, *Motacilla a. alba* Linn. in *Bull. B.O.C.* 85 (9) (pp. 161–68), the following extracts from Annual Reports of the Uganda Game Department are of interest.

1937, para. 137. "Black-and-White Wagtail (*Motacilla aguimp vidua*). This familiar and friendly little species indulges in considerable local movement, and a flock of thirty was observed at Katebo on the Victoria Nyanza (N.W.) on 2nd March. At Entebbe a pair, after an absence of several months, re-appeared in their breeding haunts on 21st February."

1950, para. 359 (27). "African Pied Wagtail (*Motacilla aguimp vidua*). This confiding resident nests, according to Jackson (*l.c.*), from February to June and again from October to December. Like many other wagtails it roosts gregariously when not breeding. Throughout 1950 between 200 and 400 birds (the number varied) could be found roosting at night in the small yachts anchored off the Entebbe pier, completely safe from night prowling enemies and protected from cool night winds. Many of the birds slept under the floor-boards of the yachts. As the species is known to indulge in considerable local movement (Annual Report, 1937, para. 137), an effort was made to ring some, in the hope that an idea of the extent of this movement might be obtained.

Torchlight catching operations resulted in 102 being ringed, as follows: 8th July, 16; 13th, 17; 17th, 14; 31st, 14; 7th August, 7; 7th September, 13; 4th October, 12; 6th December, 9. Jackson (*l.c.*) records that in Uganda this wagtail "is not infrequently subject to a deformed foot, a mere stump, or in the form of a club foot with the toes only missing". Over 10 per cent. of the birds ringed in 1950 had swollen, scaly legs, half as thick again as normal. Two birds ringed in the yachts in July were re-trapped there in December."

It is presumed that these hundreds of wagtails must have come from an area of considerable extent, for although widely distributed and generally associated with settlement, this species, except in the breeding season, usually occurs in pairs. It is very territorially conscious and does not tolerate intrusion.

Another dwarf Pheasant

by J. S. Ash

Received 11th Novembar, 1965

It is of interest that a second dwarf cock Pheasant (*Phasianus colchicus*) has occurred in the same area in which one was found last year (Ash, 1965). The present bird was shot on 2nd November, 1965, at Middleton, near Whitchurch, Hampshire, and like the previous record this specimen was submitted by Captain A. A. L. Wills. Unfortunately, it was badly damaged by shot and was partly decomposed when seen by Captain Wills, so that only the head, a wing and one leg could be saved for examination.

The head has been preserved in 5 per cent. saline formalin and is available to anyone who may wish to study it further. Its standard measurements are compared with those from *The Handbook of British Birds*, with the 1964 Whitchurch cock and with a Northamptonshire cock described earlier (Ash, 1961).

	Measurements in mm.			
	The Handbook	*Oundle cock*	*Whitchurch* 1964	*Whitchurch* 1965
Wing	235–260	219	215 and 216	224
Tarsus	60–78	50	45 and 45	52
Bill (from feathers)	28–32	26	21.5	24
Weight in gms.	1394	510.3	426.5	?

The 1965 specimen, like the 1964 Whitchurch bird, was also rather late-hatched. Based on wing moult it was 13–14 weeks of age (1st primary =39 mm.), so that it hatched in the third week of July.

References:
Ash, J. S. (1961). Dwarfism in a Pheasant. *Bull. Brit. Orn. Club*: 81: 95–96.
— (1965). A further case of dwarfism in a Pheasant. *Bull. Brit. Orn. Club*. 85: 65–66.

Some clutches of wader eggs from E. C. Stuart Baker

by C. J. O. Harrison

Received 17th September, 1965

Work on the egg collection which the late Col. R. F. Meiklejohn presented to the British Museum (Natural History) has revealed some unsatisfactory clutches of wader eggs among those which Meiklejohn purchased from E. C. Stuart Baker. There are two sets of four eggs of the Lapwing, *Vanellus vanellus*. These are atypically dark eggs and are accompanied by Baker's original clutch card. This bears two slips giving the locality as Perthshire and the dates as April 1913, and May 1913. Baker's comments are "presumably the same bird laid both clutches. First clutch laid about second week in April, second clutch about first week in May in same field on same ridge". One egg in the May clutch is marked in Baker's handwriting "4/ Vanellus vulgaris / 1463 / 5. 1913 / Perthshire", and the clutch number, species number and date are on the other three. The latter three also bear a pencilled "6" or "9" and are relatively similar although one is distinctly glossier and browner than the other two. The first egg has a matt surface and is pale olive-green, sparsely marked.

The other set of four for which Baker's data card quotes "Perthshire, April 1913" consists of three similar eggs with an "L" or "7" pencilled on them, one inscribed in Baker's hand "3/ 1463 / Dumfries / April 1910" with the "3" subsequently altered to "4", the other two inscribed "3 / 1463/ April 1910". The fourth egg is unlike the other three, with a matt surface and elongated shape. It is inscribed in Baker's hand "3 / April 1919 / Dumfries".

There is also a clutch of six eggs of the Common Snipe, *Gallinago gallinago*, but the original collector's slip, if examined closely, shows that an original clutch number of "4" has been altered to "6". The eggs are inscribed in Baker's hand "c/6, 18.5.1903". The eggs could have originated from two sources but the pattern and colour intergrade and there is no obvious discontinuity.

Meiklejohn also purchased from Baker a series of clutches of eggs of the Ringed Plover, *Charadrius hiaticula.* Two sets of four from Wells, Norfolk, one dated 1st June 1920, the other 30th June 1924, are of interest. They appear to be made up from four pairs of eggs. Each pair has a striking and distinct pattern differing markedly from that of the other pairs. They are grouped to form two clutches of four eggs which, in view of what is known of the inheritance of pattern and colour and of colour variation in other clutches of the species, are biologically improbable units.

In addition there are three clutches of the same species consisting of five eggs, one from Wells dated 28th May 1921, and two from Blakeney, one on 14th June 1917, and one on 4th May 1920. The last contains four eggs of similar colour and pattern, all being peculiar in possessing a constricted narrow end, the egg becoming noticeably narrower at one point before the tip rather than tapering evenly towards it. The fifth egg is paler in colour with an even taper. The clutch from Wells has three similar broad eggs with slightly constricted tips, another similar in markings to these but a little narrower and tapering more evenly, while the fifth is larger, buffer, and more heavily marked than the other four. The third clutch consists of five very similar eggs.

From the evidence available one can only conclude that in some cases at least eggs were regrouped into clutches. In view of this there are grounds for questioning the abnormally large clutches of Snipe and Ringed Plover, and it would be of interest to know if the statements in the *Handbook of British Birds* (Witherby *et al.* 1940) mentioning c/6 for the Snipe and c/5 for the Ringed Plover as of exceptional occurrence were based on the existence of these clutches.

References:

Witherby, H. F. *et al.* 1940. *Handbook of British birds.* Vol. 4. Witherby: London.

A specimen of *Luscinia svecica volgae* (Kleinschmidt) migrating through Rumania

by Dan Munteanu

Received 13th December, 1965

The Bluethroat subspecies known in Rumania is *Luscinia svecica cyanecula* (Meisner). It breeds in small numbers about the pools of the district Banat; it is known also in the rest of the country, but only as a rare bird of passage.

In 2nd April, 1963 I collected at Pingarati (Bacau district), on the Bistrita valley, a male Bluethroat whose blue plastron has a chestnut-coloured spot in the middle of it, but the lower part of the feathers forming the spot is white. Considering this peculiarity, it is clear that the bird I collected belongs to *L. s. volgae* (Kleinschmidt) (syn. *L. s. occidentalis* (Zarudny), nomen praeoccupatum), a most variable race, intermediate between the nominate *svecica* and *cyanecula*, that breeds in the central part of Russia and northern Ukraine, passing the winter in the eastern part of the Mediterranean region.

The above mentioned bird proves that some *volgae* specimens, in their migration, are passing through the eastern part of Rumania.

On the systematic position of the Goldfinch, *Carduelis carduelis* (L.) in Rumania

by Dan Munteanu

Received 13th December, 1965

In 1909, Tschusi described a subspecies of Goldfinch characteristic to Rumania, *Carduelis carduelis rumaeniae*, which, in the author's opinion, is the darkest form of the species. Its validity has been admitted by Hartert (1901–1938) and other ornithologists. R. Dombrowski (1912), in his fundamental work concerning the Rumanian birds, mentions three subspecies of Goldfinch: *C. c. rumaeniae* Tschusi, a breeding bird; *C. c. carduelis* (Linnaeus), a frequent visitor in winter; *C. c. major* Taczanowski, a specimen shot at Cernavoda on 13th February (the year is not indicated). This point of view has been adopted both by D. Lintia in the Rumanian version of Dombrowski's book (1946), and by all the Rumanian ornithologists. On the other side, C. Vaurie (1956), studying four goldfinches from Rumania, found that these birds are not darker than the Scandinavian specimens and he concludes: "Hartert stated that *rumaeniae* required further study, and until then, I believe this name is best considered as a synonym of nominate *carduelis*" (see also Vaurie, 1959).

MATERIAL EXAMINED

From Rumania I examined 44 breeding birds and 49 winter birds. The comparative material from abroad consists of five specimens from Sweden, 10 from Germany, one from Switzerland, seven from Hungary, 16 from Poland, 15 from U.S.S.R., 16 from Yugoslavia and four from Bulgaria (74 in all). The goldfinches from Yugoslavia and Bulgaria belong to the subspecies *C. c. balcanica* Sachtleben, and three specimens from U.S.S.R. (the Crimea) are *C. c. nikolskii* Moltchanov, a subspecies synonymized by Vaurie with *brevirostris* Zarudny.

DISCUSSION

Beginning the research of the available material, I intended to check that the goldfinches from Rumania do not really differ from typical *carduelis*, to prove Vaurie's point of view concerning *rumaeniae*. To my surprise, however, I noted the existence of an important difference between the Rumanian goldfinches and those from central and northern Europe, but in a contrary direction to that stated above. I remarked that the majority of the breeding goldfinches examined by me belong to the subspecies *C. c. balcanica* Sachtleben, known previously only in Crete, Greece, Albania, Yugoslavia and Bulgaria.

Unfortunately, I could not collect goldfinches from all over the country, but I can outline the distribution of the races in the different provinces. The Balcanic subspecies is surely breeding in Dobruja, in Wallachia and in most of Moldavia; in northern Moldavia I found a hybrid population *balcanica* x *carduelis*, as well as typical specimens of *carduelis*. Oltenia is, of course, populated by *balcanica*, and Banat, judging by the two specimens examined by me, has a hybrid population. The situation in Transylvania requires further study, but I can state that at least in the south-eastern part of this province, *balcanica* is breeding (the single specimen I have from Cluj is a *balcanica*); in the western and north-western part of Transylvania, there is probably a gradual changing towards *carduelis*, existing in Hungary and continuing in the rest of the Continent.

I am sure that *balcanica* is distributed beyond the eastern borders of Rumania, in south Bessarabia. I make the remark that "*nikolskii*" specimens are very similar to the hybrid birds *carduelis* x *balcanica*.

It must be pointed out that the colour difference between *balcanica* and *carduelis* does not lie only in the presence, on the dorsal part, of a paler hue in the case of the first subspecies than in the second, but mostly in the lack of the chestnut hue characterizing the nominate race, this peculiarity being very constant. Indeed, in the material examined, I found relatively dark-coloured specimens of *balcanica*, but the back is pure brown and not chestnut-brown.

The wing sizes of the Balcanic specimens according to my measurement are the following:—Bulgaria: females 76, 76.5; males 80, 80 mm. Yugoslavia: females (5) 75–79 (76.2); males (10) 77–79 (78) mm.

By comparison with the above, the Rumanian population of *balcanica* presents rather higher sizes, quasi-similar to those of the nominate form; in this way the Rumanian *balcanica* gets closer to the nominate race. Thus, the wing length is 76–78 (77.3) mm. in three females and 77–84 (81.5) mm. in 18 males.

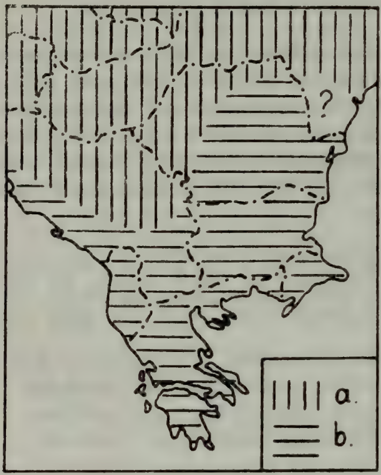
The majority of the goldfinches collected in winter belong to the nominate race, which, in this season, frequently appears across all the Rumanian territory. However, there can be found some *balcanica* specimens, a fact which proves that this race is only partially migratory from Rumania.

Finally, some words about the type of *rumaeniae*, now in the Munich Museum. It was collected at Baneasa (this is the correct spelling of the locality indicated by Tschusi and then by other authors, too, with the name of "Baneaso"), near Bucharest, on 15th November, 1908, by R. Dombrowski. It is not a breeding bird, being collected in a month in which the birds belonging to the nominate race have already come to Rumania as winter visitors. From the point of view of the colouring, it is clear that the specimen belongs to the *carduelis typicus*, but it is intensely coloured, mostly on the breast.

Among the specimens examined by me I have not found any belonging to the race *C. c. major* and the specimen cited by Dombrowski is not available to me. Bearing in mind that it is hardly probable for this race to reach south-eastern Europe in winter, I think we must delete it from the check-list of Rumanian birds.

CONCLUSIONS

The subspecies of Goldfinch breeding in the south-eastern half of Rumania is *C. c. balcanica*, replaced in north Moldavia by a hybrid population *carduelis* x *balcanica*, as well as *carduelis typicus*; in the western part of Transylvania it is probably replaced by the nominate race. In winter come numerous northern specimens of *carduelis*. "*Rumaeniae*" has been described on wintering specimens of *carduelis*, among whose synonyms we can rightly include it. The appearance of *C. c. major* in winter requires further checking.



The distribution (partially presumptive) of the *C. carduelis* races in south-eastern Europe.
(a – *carduelis*; b – *balcanica*)

ACKNOWLEDGEMENTS

I must address my sincere thanks to all those who kindly put comparative material at my disposal: Renata Rucner (Zagreb), G. Diesselhorst (Munich), St. Doncev (Sofia), M. Jozéfik (Warsaw), A. Keve (Budapest), I. Pátkai (Budapest) and L. A. Portenko (Leningrad). I thank too the Rumanian ornithologists I. Kohl (Reghin), M. Maties (Cluj), E. Nadra (Timisoara) and A. Papadopol (Bucharest). I am also indebted to C. Vaurie (New York), who has been so kind as to give me his opinion about some of my specimens.

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CONTRIBUTORS

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Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

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DINNERS AND MEETINGS FOR 1966

17th May, 20th September, 18th October, 15th November and 20th December.

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BULLETIN
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The six hundred and thirty-fifth meeting of the Club was held at the Rembrandt Hotel, London, on the 17th May, 1966.

Chairman: Dr. J. F. Monk

Members present: 15; Guests 3.

Dr. K. Simkiss spoke on the subject of bird flight.

A partial albino of *Crypturellus soui* (Hermann) from Surinam

by F. Haverschmidt

Received 30th December, 1965

On 22nd April, 1965, I received a female *Crypturellus soui* (Hermann) in which the dark brown plumage of the upperparts and the rufous feathers of the underparts were mixed with a large number of white feathers giving the bird a pied appearance.

The bird was captured a short time before near Lelydorp, Surinam and was kept in confinement before it died. It is now preserved under my field number 7286 in the Leiden Museum.

I do not know whether partial albinism has previously been seen in tinamous.

A specimen of *Melanerpes cruentatus* with a deformed bill

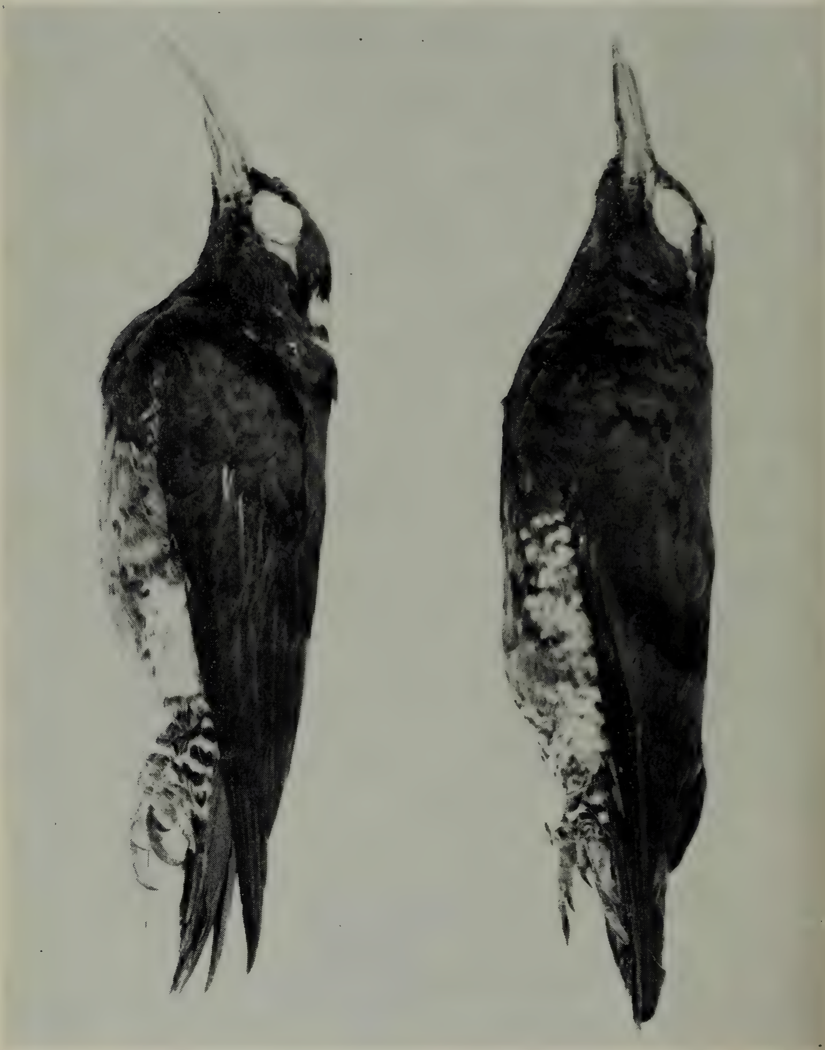
by F. Haverschmidt

Received 30th December, 1965

On 26th February, 1963, I collected at a forest edge near Phedra (Surinamriver), Surinam, a male *Melanerpes cruentatus* with a deformed bill.

The upper mandible is much longer than normally and has a length of 32 mm. and it extends 15 mm. over the lower mandible.

The bird was in perfect plumage and condition and it was hammering with some others in the top of a dead tree. Apparently it was not handicapped at all by its lengthened upper mandible which seems strange for a bird so dependent on the use of its bill. The specimen is now preserved under my field number 5890 in the Leiden Museum.



Left. A male *Melanerpes cruentatus* with a deformed bill
Right. A specimen with a normal bill

Further systematic notes on Mexican birds

by ALLAN R. PHILLIPS

(*continued from page 94*)

Lamprolaima rhami (Lesson), 1838

I perceive little taxonomic value in the many males of this striking humming-bird in collections. (MICH, RTM, US). The few authentically labelled females I have seen, however, permit recognition of

Lamprolaima rhami occidentalis subsp. nov.

Description: closely similar to nominate *rhami*; males possibly averaging slightly paler chestnut below wing. Females paler (more smoky grey, less tinged with steel-blue or -purple) on throat, chest, and crissum, and averaging very slightly larger (wing 66–68, tail usually 42.5–42.8 mm.).

Distribution: known only from the Omiltemi region, Guerrero.

Type: original no. 7500 ♀ ad. (ovum 1 1/4 mm.); *ca.* 2.5 km. SSW. of Omiltemi, Guerrero, on top of mountain above Chautipa (*ca.* 17° 29′ N. 99° 39′ 38″ W.), 21 Oct. 1964; collected by A. R. Phillips, prepared by Juan Nava S.

Measurements of type: length 124, extent 176, wing 67.5, tail 42.5 mm. Weight 7.1 grammes.

Remarks: I see no trenchant character separating *L. r. saturatior* Griscom, 1932: Cerro Cantoral, Dist. Archaga, Honduras, unless it be *paler* in the ♀ than *rhami* of eastern México north of the Isthmus of Tehuantepec! Lesson's specimen probably came from the vicinity of Xalapa, Veracruz, to which I accordingly restrict the type locality of *L. r. rhami*.

Colibri amethystinus (Swainson), 1827

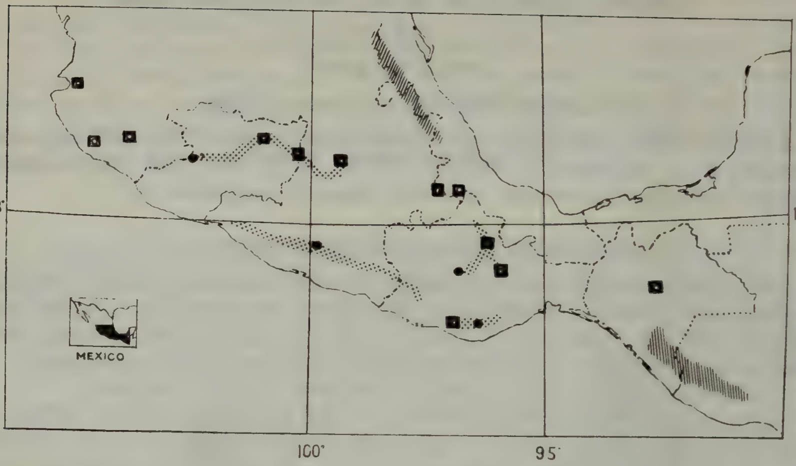
(LSU, MICH, MIN, RTM, US). Extensive series examined refute the claim of Griscom (1937) and Blake (1950) that gorget colour of ♂♂ is too variable individually to use. Actually 95–99% of a given population are much alike, and the remainder hardly match another race. The distribution of the pinkish and bluish purple varieties in concentric circles is too extraordinary and illogical for mere words (see map, fig. 3). *Both* varieties occur in the same mountain range in Oaxaca and possibly Michoacán, though in different parts; should overlap be found, the bluish-throated *C. margaritae* (Salvin and Godman), 1889: Omiltemi, Guerrero, may yet be restored to specific rank, Topotypes seem indistinguishable from birds from Río Molino, Oaxaca; yet in the intervening area lives the pinkish-throated

Colibri amethystinus circumventus subsp. nov.

Description: closely similar to the geographically remote *C. a. amethystinus* ("Temascaltepec, Real del Monte"), but paler greyish below, particularly on the chest. Differs conspicuously from all known adjacent populations in the pinkish (not bluish) purple throat of ♂♂.

Distribution: known only from the type locality.

Types: original nos. 8113 and 8117, ad. ♂♂ (testes not enlarged); km.



Distribution of pink-throated (open squares) and blue-throated (solid dots) males of *Colibri amethystinus.* Shaded areas indicate probable regions of fairly continuous suitable habitat, those in eastern Mexico and Guatemala being occupied exclusively by pink-throated males.

183 (*cf. Micrastur*, *supra*), 7 Dec. 1964; netted, and prepared by Juan Nava S.

Measurements of types: (respectively) length 124, 122; extent 163—(wings moulting); wing 65—; tail 40.5, 41.6 mm.

Material examined: 22 ♂ 6 ♀.

Remarks: I perceive no structural difference between "*Lampornis*" *auct.* and *Colibri*, though these genera are widely separated in recent lists (Peters, 1945; Friedmann *et al.*, 1950; Eisenmann, 1955; etc.).

The darkish western pink-throated race usually called *brevirostris* (Ridgway), 1908: San Sebastián, Jalisco, ranges all the way east to south-western Veracruz, where I took a ♂ at Puerto del Aire (north of Tehuacán, Puebla), and to northern Oaxaca (LSU). I know of no recent records for either of Swainson's putative type localities; if Bullock was mistaken in his recollection of these, he may have taken the types on the Michoacán—México border, whence I have seen "*brevirostris*". It is known that he collected west to the present Morelia, Michoacán, where he secured *Myioborus miniatus* and *Ergaticus ruber*. Whatever their actual provenence, it seems clear that Swainson's birds were mostly or entirely "*brevirostris*", which is thus a synonym of *amethystinus*, having nothing whatever to do with the bluish-throated *margaritae* despite Blake's statement (1950) that separation of these two "is indefensible".

The pale race of north-eastern México, on the mountains fronting the Gulf of Mexico, should now be called *henricus* (Lesson and De Lattre), 1839: Coatepec, near Xalapa. It differs from all others in the paler gorget and underparts and in the pale *brownish* tinge below.

Heliomaster longirostris masculinus subsp. nov.

Description: ♂♂ closely similar to *H. l. pallidiceps* Gould, 1861 (Xalapa, Veracruz), but crown slightly bluer and gorget averaging more reddish, less magenta or purplish; adult ♀ much like ♂, unlike the sexually dimorphic ♀♀ of other races. First-basic-plumaged ♀ more like ♀ *pallidiceps* (of all ages), but sides and flanks more extensively and purely green; crown deeper green, with the blue of adult at least indicated (on sides of forecrown); and the green more bluish generally, the rectrices darker and bluer even to their bases (CM, RTM).

Distribution: Type locality and (1 unsexed juvenal) Putla, Oaxaca (CU).

Types: original nos. 7297 and 7345 ad. ♀♀; San Gabriel Mixtepec, south-western Oaxaca (*cf. Micrastur*, *supra*), 8 and 11 Dec. 1963; prepared by Santos Farfán B. and Juan Nava S., respectively (7345 brought in by boys).

Measurements of types: respectively, length 137, 137; extent 154, 156; wing 61.3, 62.3; tail 33.2, 34 mm.

Remarks: This is probably another first record of a chiefly Caribbean species on the Pacific slope west of the Isthmus of Tehuantepec; I am sceptical of the old report from Guerrero. My series (4♂, 2 ad. ♀, 1 imm. ♀) was personally dissected; age of ♀♀ was determined by the appearance of the ovary. They occurred sympatrically with the outnumbered *H. constantii.*

Trogon collaris Vieillot, 1817

Here again the taxonomic value is in the unworn, dull ♀, poorly represented in collections (AMNH, CAS, F, KANU, MICH, WF). Dixon and Davis (1958) traced this Caribbean species west to Guerrero. Here unworn ♀♀ have apparently not been taken; but I have a small series from the Pacific slope of Oaxaca and of Chiapas. These ♀♀ are distinctly paler, duller (less rufescent) brown than a good fresh series from north-eastern Chiapas (Santa Rosa).

T. puella Gould, 1845: ''Escuintla, South America'', is generally and probably correctly thought to have come from Pacific Guatemala. This is unfortunate, since no fresh ♀♀ seem to exist from Escuintla, Guatemala, and the population there may well prove to be intermediate. It seems conceivable that Gould meant ''south México'', *i.e.* Pacific Chiapas. In any case, *puella* probably applies to the Pacific race, leaving the Caribbean race to be called

Trogon collaris xalapensis Du Bus, 1845, Esquiss. Orn., 1, pl. 2: Xalapa, Veracruz.

Description: Sides of chest, in autumn ♀♀ from north-eastern Chiapas, near Dresden Brown, often slightly approaching Antique Brown or Raw Umber. In contrast, western Oaxaca ♀♀ are nearer a pale Saccardo's Umber (or even pale Sepia), sometimes approaching Buffy Brown.

Distribution: Caribbean slope generally, south at least to San Lucas, Guatemala (1♀, AMNH), not far from the type locality of *puella.*

Dendrocopos scalaris (Wagler), 1829

(LDY, MIN, RTM, WF). Miller *et al.* (''1957'') refer mainland birds from southern Sonora south and east to central Oaxaca (Mitla) to 3 races:

sinaloensis (Ridgway), 1887: near Mazatlán, Sinaloa, Sonora and Sinaloa; *centrophilus* (Oberholser), 1911: Ameca, Jalisco, Nayarit to western Michoacán; and *azelus* (Oberholser), 1911: La Salada, Michoacán, central Michoacán to central Oaxaca and south-western Puebla. Thus we should find wings of 94–101.5 mm. in Sinaloa ♂♂, 100–104.5 in Nayarit, and 92–94 from central Michoacán to Oaxaca. The espoxed culmen should be, respectively, 19–23, 19.5–23, and 18.5 mm.

Actually, however, neither Dr. J. W. Hardy nor I can perceive the slightest difference (other than fading with wear) between birds from Sinaloa, Nayarit, *coastal* Jalisco, Colima, and southern Michoacán. ♂♂ from the lower parts of the latter two areas have the wing less than 98 and bill less than 19.5, which are about average figures in western parts of Nayarit and Jalisco; no taxonomic separation is feasible. Oberholser apparently had a juvenal-plumaged bird which he made the unique type of "*azelus*". Actual measurements of the two "Mitla" males called *azelus* by Miller *et al.* are: wing 102.2, 108; exposed culmen 21.6, 22.2. I do not doubt that they were actually taken in or near Hidalgo. (See Marshall, 1964: 353, on another "Mitla" occurrence listed by Miller *et al.*)

The characters of the populations of central southern México, then, remain to be established. From most of Oaxaca and south-western Puebla I have seen no unworn material. Six specimens from Guerrero are separable as

Dendrocopos scalaris lambi subsp. nov.

Description: very similar to *sinaloensis* (see above), but primary coverts with little white (on inner webs only) or wholly black; white also reduced, and somewhat brown-tinged, in distal greater wing-coverts and on distal parts of primaries. The ♂ has the white spots on the crown also reduced in size and extent (not noticeable far behind the level of the eyes).

Distribution: central Guerrero, west to the Omiltemi area.

Type: in my collection; ♂; Chomicotitlán, at least 15 km. east of Acahuizotla, Guerrero, 3 Nov. 1964; collected by Sóstenes Romero H.

Measurements of type: wing 92.7; exposed culmen 18.0 mm.

Remarks: I dedicate this race to the late Chester C. Lamb, whose unselfish labours supplied most of the critical material used in comparisons. His specimens from Tiquicheo, south-eastern Michoacán (RTM), seem to be good *sinaloensis*, though rather broadly white dorsally (and faded, being January birds).

Pachyramphus major (Cabanis), 1847

(AMNH, F, KANU, LDY, LSU, MCZ, MICH, MIN, RSC, RTM, US, WF).* In this becard, rare nearly everywhere, the variations in ♂♂ are again surpassed by wide individual and racial variations in ♀♀ (tending to fade out with wear). Major variations are: (1) centre of crown broadly cinnamon, not black, from Sinaloa to western Oaxaca (sight record at close range, but unaccountably missed), *uropygialis* Nelson, 1899; (2) tinged with warm cinnamon generally, or at least on malar area, chest, sides, flanks, and crissum; belly buffy, less yellow or clear; dusky of central

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*The authorities of the Museum of Vertebrate Zoology also kindly lent me their series from the critical areas; but unfortunately all ♀♀ and young proved to be *P.* ("*Platypsaris*") *aglaiae.*

rectrices obsolete; Nuevo León (where larger, with bigger bill, possibly paler, and probably separable) and eastern San Luis Potosí south in eastern México to Isthmus of Tehuantepec, *major*; (3) similar but darker above, Caribbean slope of Central America, *australis* Miller and Griscom, 1925; (4) palest, particularly below; Yucatán Peninsula, *itzensis* Nelson, 1901; and (5).

Pachyramphus major matudai subsp. nov.

Description: ♀ nearly as pale yellow ventrally as *uropygialis*, and with little or no cinnamon wash, but crown wholly black; nuchal collar pale or obsolete; upperparts variable but never (?) strongly rufescent. Averaging slightly smaller than adjacent races.

Distribution: Pacific slope of Chiapas and Guatemala; in typical form from Finca Esperanza, Escuintla, Chiapas (MICH, WF) east to Volcán Tajumulco (F).

Type: original no. 5328, imm. ♀; Finca Guatimoc, 7 km. by road N. of Cacahoatán, south-eastern Chiapas, 20 Sept. 1959. Little fat.

Measurements of type: length 163; extent 246; wing 76.2; tail 56.9 (but central rectrices not full-grown); bill 10 mm. Weight 22.6 grammes.

Material examined: 4♀, as above; less typical ♀♀ from Finca El Cacahuito (Taxisco, Santa Rosa, eastern Guatemala—F), 39 km. SE. of Tonalá, Chiapas (WF), and near Pijijiapan, Chiapas.

Remarks: I take great pleasure in naming this race for Eizi Matuda, true naturalist, to whose broad interests we owe so much of our knowledge of the biota of southern Chiapas. The type has the throat Naphthalene Yellow and the posterior underparts yellower and a bit deeper (other ♀♀ are even paler); the back, medially, is somewhat like Tawny-Olive but much darker and greyer. Birds of more northern parts of Chiapas and Guatemala, and of adjacent areas, seem to be variable intermediates, though *australis* may range west to easternmost Chiapas.

Material examined suggests that the north-easternmost populations may be partially (or entirely?) migratory.

Myiozetetes similis (Spix), 1825

Caribbean birds, from north-eastern México and Yucatán south to at least Costa Rica, are all much alike; they are *texensis* (Giraud), 1841. The description of *primulus* van Rossem, 1930: Tesia, Sonora, was based so completely on faded specimens that he later (1945b) referred the only fresh one he saw to *texensis* as a straggler. Actually the species is sedentary and *all* Sonora birds are *primulus*, which (comparing only fall specimens) is a well-marked pale extreme. As in *Glaucidium*, most of the Pacific coast is occupied by intermediates, which I propose to call

Myiozetetes similis hesperis subsp. nov.

Description: very similar to *texensis* of Veracruz, but back paler. Deeper, brighter yellow below than *primulus*, and greener and slightly darker above.

Distribution: lower parts of Pacific slope of México from southern Sinaloa (north at least to Rosario) and southern Zacatecas south and east to south-western Puebla and at least south-eastern Oaxaca (probably into western Chiapas, whence no specimens seen).

Types: original nos. 4282–4283, ad. ♀ ad. ♂; both from 10 km. S. and 1 km. W. of Tepic, Nayarit, 11 Oct. 1956; very little fat.

Measurements of types: respectively, length 199, 203; extent 310, 336 (—); wing 92.3, 95; tail 74.5, 80.5 mm. Weight 32.2, 33.4 grammes.

Material examined: extensive series of my own, LSU, MIN, RTM, WF, etc., chiefly from Nayarit, Morelos, Guerrero, and Oaxaca.

Since Giraud's birds, of course, did not come from "Texas", I restrict the type locality of *Muscicapa texensis* Giraud, 1841, to Xalapa, Veracruz, the chief centre of collecting activity in México at that time. For an interesting account of Giraud's famous "sixteen new species" see Deignan, 1961:276. It should be noted that *hesperis* is the "*primulus*" of Zimmer, 1937.

Empidonax fulvifrons (Giraud), 1841

My studies (LDY, LSU, MICH, MIN, RTM, US, WF) confirm the well-marked pale north-western race *pygmaeus* Coues, 1865: Fort Whipple [=Prescott], Arizona. Otherwise, colour variations from Nayarit and north-eastern México south to Honduras seem to me to be largely seasonal and partly individual; possibly sex, age, and post-mortem "foxing" are involved as well. While *fusciceps* Nelson, 1904: Comitán, Chiapas, is probably a good race, its characters are not as striking to me as to Hellmayr (1927: 221), nor do I find a marked size difference as claimed by Griscom (1932b). I am not convinced that either *rubicundus* Cabanis and Heine, 1859, or *inexpectatus* Griscom, 1932, are valid races, nor that size varies geographically (rather than individually). In colour, all birds south or east of Sinaloa are to me rather similar, except

Empidonax fulvifrons brodkorbi subsp. nov.

Description: deepest, richest form known. Back nearest Olive-Brown (deeper and rustier than the Light Brownish Olive or duller of other races), in fact darker than the crown. Sides near Tawny-Olive, the chest approaching Sayal Brown or Cinnamon slightly (not Clay Colour or that hue × Pinkish Cinnamon, or paler). In fact the chest is only a little paler and duller, less reddish, than that of *Mitrephanes phaeocercus tenuirostris* Brewster of north-western México.

Type: original no. 7669 ♀; Río Molino (*ca.* lat. 16° 5′ N. long. 96° 29′ W.), southern Oaxaca, 9 Nov. 1964; collected by W. J. Schaldach, Jr.; prepared by Juan Nava S.

Measurements of type: length 119; wing 57.5; tail 49 mm.

Remarks: I saw these birds infrequently in southern Oaxaca and never obtained another specimen; nor have I seen other specimens from Oaxaca, Guerrero, or southern Michoacán. The race is respectfully dedicated to Dr. Pierce Brodkorb, distinguished student of birds, fossil and living, and of Tyrannidae in particular.

Empidonax difficilis Baird, 1858

(CAS, LSU, MICH, MIN, RSC, RTM, US) .This brilliantly-named species combines the usual problem in *Empidonax*—early departure from the breeding grounds, before moulting—with a single annual moult. Thus fresh plumages *never* occur on the northern breeding grounds. Assuming that southern races would move shorter distances, I selectively collected birds at the highest points in the winter range in Oaxaca. These further proved my thesis (Phillips, 1960: 362) that "*E. flavescens*" is conspecific, providing a connecting link

Empidonax difficilis annectens subsp. nov.

Description: nearest to *E. d. bairdi* or *occidentalis auct.* (*vide infra*), but paler, yellower green on forehead, crown, nape, and back (yet less yellowish than *E. d. salvini* Ridgway, 1886: Calderas, Volcán de Fuego, Guatemala, including "*E. flavescens dwighti* van Rossem", 1928: Los Esesmiles, Chalatenango, El Salvador, or even than *E. d. imperturbatus* Wetmore, 1942: Volcán San Martín [Tuxtla], Sierra de Tuxtla, Veracruz); more uniform below, with yellower lower throat and paler, yellower, less prominent chest-band. Wing-bars average slightly paler.

Distribution: mountains of south-western Oaxaca.

Type: original no. 8078 ad. ♀; km. 183 (*cf. Micrastur*), 4 Dec. 1964; netted, and prepared by Juan Nava S.

Measurements of type: length 149, extent 209, wing 65, tail 58.5 mm.

Material examined: type; 2♀, Río Molino, 3 and 5 May 1962; and 1♂, Río Guajolote (below Río Molino), 19 Dec. 1964. Doubtfully of this race is 1♂, San Gabriel Mixtepec, 9 Dec. 1963.

Remarks: As just shown, all records of this race come from well within the pine belt. The species winters abundantly below, also; but specimens from the lower edge of the pines (Pluma Hidalgo, US) and below (US) are all migrants from the abundant, widespread dull populations of northern México or northward; they are identical in colour with birds wintering in Nayarit and southern Sonora, *i.e.* "*culiacani* Moore" [=*E. d. difficilis*]. Thus neither of Nelson's names *E. bairdi occidentalis* or *E. b. perplexus* applies to any nearby race, and the central Mexican race again becomes anonymous. To remedy this I propose

Empidonax difficilis infelix nom. nov.

Empidonax bairdi auct. nec. P. Sclater (*cf.* van Rossem 1934: 393–394). *Empidonax difficilis occidentalis auct., nec E. bairdi occidentalis* Nelson, 1897: Pluma [Hidalgo], Oaxaca.

Description: This well-known race is relatively dark and brownish. It is nearest to *E. d. immemoratus* Moore (as represented by a series from south-eastern San Luis Potosí, LSU), but is duller, less brown, on the chest, crown, back, edgings of rectrices (basically) and secondaries, and wing-bars; *i.e.* the crown and back are more yellowish than *immemoratus*, the chest more olive or greenish.

Distribution: south-western and central México (west and north-west of Oaxaca).

Type: original catalogue no. 5060 ♂; 5 km. by road south-west of Los Corralitos = 19 km. south of Ahuacapán, Sierra de Autlán, south-western Jalisco, 22 Feb. 1959; collected by W. J. Schaldach, Jr., and prepared by his assistants.

Measurements of type: wing 69.4, tail 61.6 mm.

Material examined: series long ago. Recently 6 from Omiltemi—Chilpancingo region, Guerrero; 2 from mountains of south-western Oaxaca

(Río Jalatengo, ♀ 18 Nov. 1964; above San Gabriel Mixtepec, ♂ 3 Dec. 1963); 2 atypical, Edo. México (May, July); 1 atypical, Morelos (Jan.).

Remarks: I have seen no specimens at all similar to *infelix* from the Isthmus of Tehuantepec or farther south-east. The theory of Griscom and van Rossem (*loc. cit.*) that it winters in Guatemala was due to their failure to realize that (1) the type of *salvini* is dirty and (2) Griscom's "young male" from Panajachel, 15 Aug. 1930, would at that date be in juvenal plumage, which is always much duller than any later plumage and *must not* be compared with these. As shown above, *infelix* actually winters in Morelos and Oaxaca, and probably Guerrero also (I have ♂ and ♀ from Omiltemi, 20 and 21 Oct.).

E. d. bateli Moore (of type, not the rest of the series, which like *culiacani* and "*E. albigularis subtilis*", part, are really migrants of *E. d. difficilis*) approaches *infelix* slightly, but I agree with Miller *et al.* ("1957") that there is no clear separation from *immodulatus* Moore, which in turn, however, is inseparable from *E. d. hellmayri* Brodkorb!

Mitrephanes phaeocercus burleighi subsp. nov.

Description: a dark race, about as dark on underparts, cheeks and crown as *M. p. phaeocercus* (P. Sclater), 1859: Córdova, Veracruz, and *M. p. hidalgensis* Sutton and Burleigh, 1940: near Jacala, Hidalgo; chest deep Ochraceous-Tawny; but hue of back duller, dull greyish olive like *M. p. tenuirostris* Brewster, 1888: "near Oposura" [= Sierra de Oposura], Sonora, though darker. Thus less greenish above than *hidalgensis*, and less brown or rufescent than *phaeocercus* or, *fide* Sutton and Burleigh, than *M. p. quercinus* Dickey and Van Rossem, 1927: Mt. Cacaguatique, Dept. San Miguel, El Salvador.

Distribution: mountains of Guerrero and south-western Oaxaca.

Types: original nos. 7794 and 7839, imm. ♀ imm. ♂; Río Molino and its head near San Miguel Suchixtepec (*cf. Empidonax fulvifrons*), 14 and 16 Nov. 1964; collected by Hermilo García F.; prepared by Santos Farfán B.

Measurements of types: respectively, length 134, 141; extent 216, 225; wing 67.5, 68.5; tail 58, 61.7 mm.

Material examined: Omiltemi, Guerrero, 6; type region, 8. (Specimens from northern Chiapas are close to, if not, *burleighi.*)

Remarks: This race is named for Thomas D. Burleigh in token of recognition of his many valuable contributions to North American ornithology. In addition to CAS, LDY, and MIN, I have seen two specimens from the British Museum (Natural History) which had most kindly been compared with the type.

Cyanocitta stelleri restricta subsp. nov.

Description: very similar to *C. s. coronata* (Swainson), 1827: Mexico = Real del Monte, Hidalgo, *ex* Brodkorb (1944), but less purplish; back duller, greyer blue, and bluer on crest and chest; belly paler blue.

Types: original nos. 7687 and 7708 ♀♀ ads.; Río Molino, as above, 10 and 11 Nov. 1964; collected by Juan Nava S. and Santos Farfán B., respectively, and prepared by Nava.

Measurements of types: length 303, 296; extent 434, 423; wing 138.3, 132.3; tail 130, 123 mm.

Material examined: 7, all from the type locality.

Remarks: (MIN, RTM). Hellmayr (1934) called *ridgwayi* Miller and Griscom, 1925: Volcán de Fuego, Guatemala, "rather an ill-defined race"; while Tashian (1953) questioned the validity of *lazula* van Rossem, 1928: Los Esesmiles, Dept. Chalatenango, El Salvador. While I have not seen specimens from south of interior Chiapas, I too, fail to perceive alleged racial differences between these, birds from Guerrero ("*teotepecensis* Moore", 1954, of Miller *et al.*, "1957"), and true *coronata* of Veracruz and Hidalgo. Thus the new race is surrounded on all sides by *coronata*!

Cyanocorax mirabilis hardyi subsp. nov.

Description: closely similar to *C. m. mirabilis* (Nelson), 1903: Omiltemi, Guerrero, but slightly deeper blue above, at least on tail, upper tail-coverts, rump, and edgings of remiges. Bill heavier (and relatively stubbier).

Types: original nos. 7672 and 7822 ♂♂ ads.; Río Molino, as above, 9 and 15 Nov. 1964. 7672 collected and prepared by Santos Farfán B.; 7822 collected by Hermilo García F., prepared by W. J. Schaldach, Jr.

Measurements of types: length 259, 263; extent 338, 342; wing 109, 107.5; tail 113.3, 116.5; depth of bill at nostril 9.3, 9.2 mm.

Material examined: also 1 ♂ imm. (wing 104.3, tail 110.3, depth of bill 8.8) from the nearby Río Guajolote.

Remarks: It is a pleasure to be able to dedicate this elusive jay to Dr. John William Hardy, not only in recognition of his interesting and important work on jays, but also of the great amount of help he has given me in my work.

In comparison, depth of bill ranges from 7.8 to 8.7 mm. in *C. m. mirabilis*. My reasons for declining to recognise colour "genera" of jays have been stated previously (Phillips, 1950, 1965).

Cyanocorax yncas confusus subsp. nov.

Description: rather similar to *C. y. vividus* (Ridgway), 1900: Pluma [Hidalgo], Oaxaca, but smaller, with iris yellow (except in juveniles?), and slightly darker above and on sides of head, particularly the latter.

Distribution: Pacific slope of Chiapas and (*fide* Hellmayr) Guatemala.

Types: "♀?" and ♀ [imms.], 6 and 4 km.± east of Pijijiapan, Chiapas, 15 Nov. 1964 and 6 Oct. 1965; collected by Abraham Ramírez V. In my collection.

Measurements of types: wing 115.3, 117.8; tail 128, 132 mm.

Material examined: 5, all topotypes or types.

Remarks: Immature ♀♀ *vividus* have wings 120–120.5 in western Oaxaca, 124–126 in Guerrero; tails 135, 137 (Oaxaca), 139.5, 145.7 (Guerrero). Adult male *confusus* measure: wing 116.5, (121+; moulting); tail 139, 131. All birds west of the Isthmus of Tehuantepec are large, brown-eyed (at all ages) and pale-headed. Field experience emphasizes their distinctness from the Caribbean and trans-Isthmus group, part of which had been included in *vividus*.

Cyanocorax yncas persimilis subsp. nov.

Description: almost identical to *C. s. confusus*, *supra*, but still somewhat darker, more purplish blue on the head (particularly the sides and the nasal tufts); averaging slightly darker, less yellowish, green dorsally.

Distribution: Caribbean slope of Isthmus of Tehuantepec area, at least in southern Veracruz.

Types: original nos. 6476 and 6477 imm. ♂(?), ad. ♀; 2 km. north of Ocotal Chico, near Cerro Santa Marta, south-eastern Veracruz, 11 Dec. 1962; taken from flock of about six by Florentino Francisco R., and prepared by him and Juan Nava S. (6477), and by Santos Farfán B. Irides yellow.

Measurements of types: im., wing 114.5, tail 127 (1 rectrix longer); ad. ♀, length 300 [+? Some *rigor mortis*?], extent 373 [+?], wing 123, tail 131.3 mm.

Material examined: also 3 from north-east of Catemaco, Veracruz.

(*to be continued*)

On variation in the austral populations of *Oena capensis* (Linnaeus)

by P. A. CLANCEY

Received 22nd January, 1966

Oberholser (1905) was the first worker to believe that the Namaqua Dove *Oena capensis* (Linnaeus), 1766; Cape of Good Hope, Cape Province, populations of mainland Africa could be subdivided, when he proposed *Oena capensis anonyma* Oberholser, 1905: plains east of Mt. Kilimanjaro, northern Tanganyika, for the populations occurring to the north of the Zambesi River. Later workers, notably Sclater (1930) and Friedmann (1930), have not followed Oberholser in recognising two mainland African races, and the possibility of their being significant subspecific variation within the currently acceptable nominate race seems not to have exercised the minds of systematists for all of thirty-five years and more. Recently, I (Clancey (1964)) drew attention to the fact that there appear to be valid grounds for re-appraising Oberholser's original findings.

Critical study of a series of just under two hundred specimens of *Oena capensis* from the South African sub-continent, drawn from the collections of the South African Museum, East London Museum, Transvaal Museum, National Museum of Rhodesia, and the Durban Museum, recently carried out in the Durban Museum, shows that the division of the populations as proposed by Oberholser has no actuality. Birds occurring in East Africa do not differ as a group from all the South African populations, which latter show some quite marked variation within themselves, though its study seems to indicate the presence of more than one race of *Oe. capensis* in mainland Africa.

Examination of series *Oe. capensis* from various parts of southern Africa reveals that the birds can be arranged in two groupings on the basis of colour differences present in both sexes. In the males of one group the back and scapulars are about Drab (Ridgway [1912], pl. xlvi), into which the grey of the crown grades insensibly over the nape, whereas in the birds of the second grouping of populations the grey of the crown is sharply demarcated from the nape, mantle, scapulars, etc., which surfaces are warmer and browner (about Buffy Brown [pl. xl]), the same colour diffused over the inner greater coverts, tertials, rump and upper tail-coverts, imparting a more saturated appearance. In the case of females, there is no clear-cut dorsal difference, though the marked trend for one group of populations to be browner and more olivaceous tinged, less grey, than the other is readily demonstrable, but when viewed ventrally the material is more readily and consistently polarised into two apparent racial groupings. The birds of one group show much clear blue-grey over the chin, fore-throat and breast, while in the second group much or all of the blue-grey colour is lacking, and the fore-throat and breast are strongly washed with buffy or rusty brown.

The differences revealed by both sexes and utilised in grouping the assembled material into two apparent races are consonant with normal trends of subspecific variation in species in southern Africa which inhabit a wide spectrum of habitats, ranging from desert edge and semidesert to markedly moister mesic biomes in the south-eastern and eastern parts of the sub-region, and show a marked increase in melanin in association with the increased precipitation in the biotope. Males with Drab as opposed to Buffy Brown upperparts and females with blue-grey throats are in the main from the dry interior and west of South Africa, characteristically from the Bechuanaland Protectorate, South-West Africa, and the Karoo regions of the Cape, while males with Buffy Brown upper parts and females with much buff or rusty overlay to the forethroat and breast seem typical of the populations breeding in the moister southern and eastern Cape, Natal, Zululand, Transvaal, northwards in the east. Many winter-taken birds tend to blur the apparent range limits of the two groups, this due largely to post-breeding dispersal and true migratory movements in some of the populations, such movements taking the desertic birds as far east in late winter as Moçambique, and the browner (mesic) birds north as far as Zambia. That *Oe. capensis* is migratory or a transient in many areas is already well documented. In coastal Natal, an area which I know well, the species does not breed, but occurs annually in small numbers in October–December, such birds presumably being transients making for breeding grounds still further south, in the Cape.

Study of the variation is still further complicated in South Africa in that not all the populations apparently breed at the same time of the year. In south-eastern Africa (eastern Cape, Natal interior and Transvaal) the species breeds mainly late October and November, whereas in South-West Africa large numbers breed in the early part of the winter (April, May). Smithers *et al.* (1957) show that in Rhodesia the species has been recorded breeding virtually throughout the year, with a peak in September and October. Benson and White, writing on Zambian birds (1957), give the breeding season for that territory as mainly August–October, while Malawi breeding records are mainly April–July. McLachlan and Liversidge (1957) list the species as breeding in South Africa throughout the year, with peaks in May and September–November, without indicating the sources of their data, which are of composite origin, but it seems that the populations of the desertic interior and west of southern Africa are in the main winter breeders, those of the moist east and south-east nesting later in the year, during the spring rains (September–November).

Allowing for anomalies in locality data deriving from local post-breeding movements and true migration on the part of some populations, it is desirable to admit two racial groupings of the populations of the Namaqua

Dove in zoogeographical South Africa, very much along the lines adumbrated in Oberholser's pioneer study of sixty years ago.

In arranging the populations of the Namaqua Dove indigenous to zoogeographical South Africa into races, the question of nomenclature naturally arises. *Columba capensis* Linnaeus has its type-locality as the Cape of Good Hope, Cape Province. Most recent material from near Cape Town is typical of the buffy brown mesic populations, though in this region the lighter and greyer backed desertic birds impinge closely on the topotypical populations of *Oe. c. capensis*, ranging south along the arid west coast of the Cape to about the lower Berg River. For the greyer and lighter desertic birds I tentatively employ the name *Oe. c. anonyma*, as they appear inseparable on any valid population characters from the East African material currently available, though ranging a little larger in size. *Oe. c. anonyma* may be a polytopic form associated with desertic or semi-desertic (xeric) conditions, and the southern and northern populations may not be in contact, but study of a more comprehensive breeding material from north of about 8° S. lat. in Africa will be necessary to resolve this question.

The nomenclature, characters and ranges of the two races of *Oe. capensis* occurring in Africa are as follows:

(*a*) *Oena capensis capensis* (Linnaeus).

Columba capensis Linnaeus, *Syst. Nat.*, 12th edition, i, 1766, p. 286: Cape of Good Hope, Cape Province.

Male with forehead, distal surfaces of face, chin and fore-throat black; top of head Gull Gray (pl. liii) with variable hinder brown overlay; back and scapulars Buffy Brown (pl. xl), this colour diffused over the tertials, rump and upper tail-coverts. Female greyish Buffy Brown on upper parts, and chin, fore-throat and breast light grey, the fore-throat and breast feathers broadly apically fringed buff or light rusty brown. Wings of 10♂♂ 106–115 (112.0), tails 132–152 (144.0), wings of 10 ♀♀ 103–110 (106.8) tails 121–145 (133.3) mm.

Material examined: 68.

Range: South-western and southern Cape, Orange Free State, (except west), Natal interior, Zululand, Transvaal, ? Swaziland, Moçambique, and eastern Rhodesia (? breeding). Taken north as far as central and northern Zambia as non-breeder in May and November.

(*b*) *Oena capensis anonyma* Oberholser.

Oena capensis anonyma Oberholser, *Proc. U.S. Nat. Mus.*, vol. xxviii, 1905, p. 843: plains east of Mt. Kilimanjaro, northern Tanganyika.

As last, but males with back and scapulars about Drab, appearing distinctly lighter, greyer, and less saturated, which surfaces are not so sharply demarcated from the grey of the head-top. Female inclined to be greyer, less olivaceous over the upper parts, and with the chin, fore-throat and breast lighter and more bluish-grey, the feathers narrowly fringed greyish or vinaceous brown. Wings of 10 ♂♂ 106–117.5 (110.3), tails 128.5–158.5 (141.1): wings of 10 ♀♀ 101.5–111.5 (105.3), tails 127–140 (135.4) mm.

Material examined: 124.

Range in South Africa: Little Namaqualand and the arid western Cape coast, eastwards through the Karoo regions to western Orange Free State, and in South-West Africa, Bechuanaland Protectorate, northern Cape, western Transvaal, western Rhodesia, western and southern Zambia, and Angola. Extralimitally over rest of species' mainland range, and to Arabia and Socotra.

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Notes on African warblers of the genus *Chloropeta* Smith

by Stuart Keith and Carl Vernon

Received 26th April, 1966

Scattered notes on members of the genus *Chloropeta* Smith, made by the authors in various parts of Africa, are here brought together in one article for convenience. The notes from Zambia were made on trips made possible through the kindness of Mr. C. W. Benson, recently of the Livingstone Museum, Livingstone, Zambia. To him we here record our thanks.

Chloropeta gracilirostris bensoni Amadon

Although this species has been known from Lake Mweru since 1938, this population was not described as a separate race until 16 years later when Amadon (1954) named it on the basis of a series taken by Benson in September 1953 at the mouth of the Luapula River at the southern end of Lake Mweru.

We have referred briefly elsewhere (Keith and Vernon) to our experiences with this bird by the Luapula River on 8th December, 1964. We were unable to collect any birds due to the depth of the water and the dense nature of their papyrus habitat, but numerous tape recordings were made of the song, of which the four most representative are reproduced here. (See illustration on p.119)

The song consists of a series of short phrases (maximum duration of any one phrase, 0.7–0.8 seconds), uttered at irregular intervals, in a manner somewhat reminiscent of the New World vireos (Vireonidae). The birds had a tendency to take one phrase and repeat it a number of times before going on to the next phrase, which they would likewise repeat. The song has a plaintive quality, and is rather weak compared to the boisterous outbursts of *Calamocichla rufescens nilotica* Neumann, which was singing in the same papyrus beds. For comparison, a single phrase of the latter's song is reproduced here (example E); the song is loud and guttural, and phrases lasting several seconds are common.

It may be of interest to record here that Keith also recorded *Calamocichla rufescens foxi* (Sclater) at Lake Bunyoni in Uganda in 1962, and he can find no difference at all in the songs of the two races. This would seem to support the conclusions of Chapin (1953) and Pitman (1956) that *foxi* is merely a race of *C. rufescens.* This is in opposition to the view of M.-Praed and Grant (1955), who accord *foxi* specific status.

The phrases of *Chloropeta gracilirostris* depicted in the sonagrams may be rendered as follows:

A. To-tslo-wee
B. Tee-tschlee-wo
C. Tslo-tschlee-wo
D. Tschlee-ow

With these renderings we have tried to convey something of the sibilant quality which characterises all the phrases. Phrase D is a compressed version of phrase C. Benson (1956, p. 19) describes a phrase heard at the Luapula mouth, which he attributes to this species, as "a musical 'pee, p-r-r-r-' ('ee' as in 'sweet')". This description seems closest to phrase B. Chapin (1953, p. 451) describes the song of the nominate race, heard at Lake Bunyoni, Uganda, as follows: "a short series of loud-half-whistled notes, decidedly variable but high-pitched and usually of 'chwee-chwee-chwee . . .' nature". This description does not really fit any of my phrases, but seems closest to C and D.

This species is a seasonal and erratic singer, which, together with its skulking habits, render it difficult to see, and it is probably frequently overlooked. Benson did not hear it at the Luapula mouth in September, but did hear it on another visit in February. Chapin heard the song at Lakes Edward, Bunyoni and Mutanda in April and May, 1927, but Keith neither heard the song nor saw any birds at these same lakes in June, 1962. John Williams, in a letter to Keith, states that he has never seen the species, though he has looked for it often at these two lakes in Uganda.

The generic status of this species has been open to some doubt. The type was placed in *Chloropeta* by Ogilvie-Grant, and has been so retained by most authors. Grant and M.-Praed (1940), however, noted that in a number of characters the bird agreed more closely with *Calamocaetor* (*sic*) (=*Calamocichla*) than with *Chloropeta*, so they proposed a separate genus, *Calamonastides* for it. They called attention to the large feet and the swamp habitat, features which it shares with *Calamocichla*; on the other hand, the olive-brown and yellow coloration and somewhat broader bill indicate relationship to *Chloropeta.*

Keith measured series in the A.M.N.H. collection of *Chloropeta gracilirostris*, both races, *C. natalensis*, *C. similis*, and *Calamocichla rufescens nilotica* (see Table). It can be seen that both *C. similis* and *C. natalensis* have much broader bills than *C. gracilirostris*, a point not noted by Grant and M.-Praed. On the other hand, bill proportions of *Cal. r. nilotica* and *Chl. gracilirostris* are almost identical: in the above specimens, the culmen of *C. r. nilotica* averages 2.76 times bill breadth at base; in *C. g. gracilirostris* the multiple is 2.61. It can further be seen from the Table that the feet of *C. gracilirostris*, as judged by measurements of the hind and middle toes, are proportionately much larger than those of *natalensis* and *similis.*

TABLE

Comparison of bill and foot measurements of *Chloropeta* spp. and *Calamocichla rufescens nilotica*

		Culmen	*Breadth of bill at base*	*Hind toe with claw*	*Middle toe with claw*	*Wing*
Chloropeta gracilirostris bensoni	1 bird	15.5	5	17	18	54
Chloropeta g. gracilirostris	average of four birds	16	6.125	19,875	21.625	61.5
Chloropeta natalensis	average of four birds	16.625	8.375	14.125	15.125	60.75
Chloropeta similis	average of four birds	16.625	7.75	14.375	15	59.5
Calamocichla rufescens nilotica	average of four birds	23.5	8.5	24.25	26.75	76.5

Bearing in mind the above, we were very interested to see whether the song of *C. gracilirostris* could give any clue to its relationships. To make a proper judgment one would need a much larger series of sonagrams than we have here presented, including the songs of *Chloropeta natalensis* and *similis*, and other members of the genus *Calamocichla*. Our opinion is therefore subjective, but we are familiar with the songs of *natalensis* and *similis*, and also with *Calamocichla* spp. and many of the closely related acrocephaline warblers (White, 1952, merges *Calamocichla* in *Acrocephalus*). There is little doubt in our minds that on the basis of song, *gracilirostris* belongs in *Chloropeta* rather than in *Calamocichla*. Except for *Acrocephalus palustris*, all the species of *Acrocephalus* and *Calamocichla* we know have harsh, grating, unmusical songs. It is difficult to characterise the song of "a *Chloropeta*", since *similis* and *natalensis* have songs differing widely in form, but both their songs have a ringing, musical quality about them which is shared by *gracilirostris*. The last is the least musical and simplest of the three, and is closest to *natalensis*. Sclater and Moreau (1933) describe the song of *C. natalensis massaica* Fischer and Reichenow from the Usambara Mountains, as "brief, loud and clear. It is a trill preceded by three notes, 'twee, twee, twee'." We find the song has considerable variation, but the general form is of some introductory notes followed by a trill.

The song of *Chloropeta similis* is quite different and of a far superior quality, the notes being sweet, liquid, and melodious. The song is slow, deliberate, and very variable. High notes alternate with low ones, and there is often a trill in the middle; these two features make the song reminiscent of that of the American song sparrow, *Melospiza melodia*. A song heard by Keith on Mt. Kenya might be rendered "chee, chee, chu, chu, tsee-jujujuju-wee".

Natalensis and *similis* have quite different styles of singing. *Natalensis* selects a perch and sings from it, whereas *similis* sings while on the move, pausing as it works its way among the bushes. Chapin (1953, p. 453) notes of *similis* that "The birds flit about in the shrubbery more like warblers than like flycatchers", and together with its size and yellow and green coloration *similis* reminds one very much of a *Phylloscopus*. *C. gracilirostris* has a similar style of singing; it does not have a regular singing perch, but sings as it moves about low down in the papyrus. This characteristic it also shares with *Calamocichla* spp.

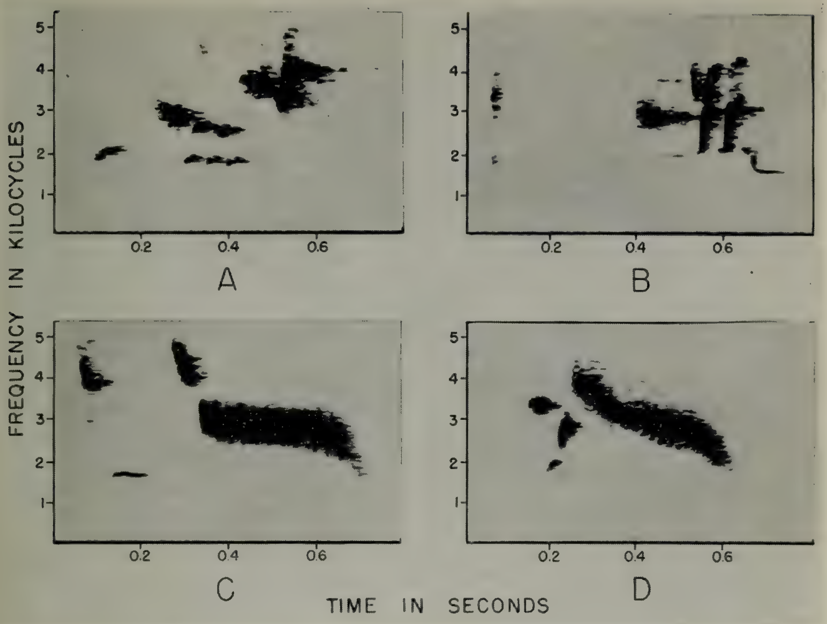
In conclusion, in spite of the subjective nature of the evidence, we would say that the song of *gracilirostris* tends to support the view of Chapin (1953), Amadon (1954), and Hall and Moreau (1962) that it should be retained in the genus *Chloropeta*.

Comparison of habitat and nests of Chloropeta natalensis and C. similis

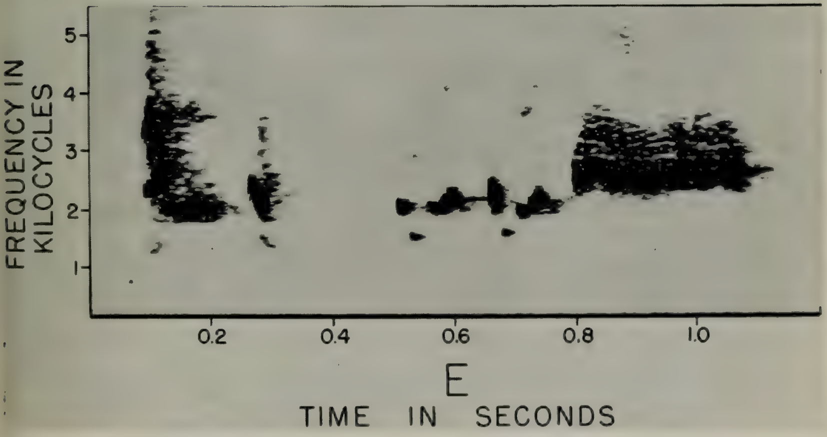
The following notes on habitat and nests of *C. similis* and *C. natalensis* were made by Vernon at the edge of the Nyika Plateau in Zambia, near the Malawi border, in January, 1964.

Habitat

C. similis: Rank clearings in forest, edges of forest patches, patches of bracken-briar, and rank growth along streams. Altitudinal range, 6,600–7,800 ft., and probably higher still.



Four phrases of the song of *Chloropeta gracilirostris bensoni*



Single phrase from the song of *Calamocichla rufescens nilotica*

C. natalensis: Inhabits rank grasslands below the plateau, penetrating up the streams running off the plateau to an altitude of 6,700 ft. It thus just overlaps with *C. similis*, and its habitat at the point of overlap is the same, *i.e.* patches of bracken-briar and the rank growth along streams. At one point the two species were found nesting 50 yards apart, in the same habitat.

Nests

A total of 6 nests were found, 2 occupied nests of *C. similis* and 1 occupied and 3 unoccupied nests of *C. natalensis*. The nests of the two species were dissimilar; those of *C. similis* were much bulkier, external measurements being 4 in. across and 4 in. deep, as opposed to 3 in. across and 3 in. deep for *natalensis*. Internal nest measurements were fairly similar, except that nests of *similis* were slightly deeper.

A nest of *similis* critically examined was made of broad grass blades, seed heads of grasses (*Panicum* spp.), mixed with finer grass, feathers, coarse and fine fern ramenta, and moss (*Brachythecium impucatum*). It was bound on the outside with cobwebs. Included also was an unidentified non-botanical fibre resembling fine, green nylon wool. As the nest was not far from the Nyika resthouse, this probably came from human clothing. There was an inner lining of feathers and the fine branches of *Thalictrum rhynchocarpum.*

A nest of *natalensis* similarly examined was built of broader grass blades bound with cobwebs, and was also lined with branches of *Thalictrum rhynchocarpum*, but no feathers, fern ramenta, or moss were used.

Details of the two occupied nests of *C. similis* referred to above including a description of the eggs, can be found in Benson and Pitman (1966). They did not mention the nest of *C. natalensis* found at the same time, so we record it here. Date, January 10, 1964; c/2, nest placed two feet up in bracken, on a small bushy mound beside a boggy stream. Nyika Plateau, Malawi, alt. 6,300 ft.

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Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

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DINNERS AND MEETINGS FOR 1966

20th September, 18th October, 15th November and 20th December.

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The six hundred and thirty-sixth meeting of the Club was held at the Rembrandt Hotel, London, on the 20th September, 1966.

Chairman: Dr. J. F. Monk

Members present: 11; Guests 7.

Dr. A. R. Phillips spoke on some birds of Mexico and he has kindly supplied this summary of his talk:—

The habitats on the eastern side of Mexico and Central America are largely of a wet tropical nature, continuous throughout, and those on the west are mainly arid lowlands from northern Costa Rica to California. Mountain pine—oak habitats are fairly continuous from northern Nicaragua to western Canada, and high mountains without pines dominate Costa Rica and western Panama.

The birds, still imperfectly known, are most easily grouped by Merriam's Life Zones: these intertwine intricately and there are no sharp demarcations between Holarctic or Nearctic and Neotropical faunas. Endemism is highest in mountains and arid regions, low in humid regions whose fauna is essentially Neotropical.

Most birds nest at times of optimum humidity, but hole-nesters seem to breed early enough for their young to emerge before the rains; hummingbirds and *Diglossa* chiefly after the rains when flowers abound. Photoperiodism plays little, if any, role.

Migrations vary greatly; ringing is of little help because of the very low recovery rate, but much can be learned from study of the subspecies. Birds of the eastern and central parts of North America tend to migrate along the Caribbean side of Mexico and winter farther south than northwestern or Texan birds, few of which go beyond Guatemala or northern Nicaragua. Many eastern birds reach western Mexico, but few western ones move far eastward. Of special interest are tropical genera (*Ictinia*, *Elanoides*, *Cypseloides*, *Myiodynastes*, *Legatus*, *Progne*; also *Contopus sordidulus* and *Vireo olivaceus* and *altiloquus*) that perform long migrations to winter in South America. Most hummingbirds and some waders have circular migrations, the former following the flowering seasons. In several cases—in swallows and some other families—the same species winters much farther north in the Pacific than in the Caribbean lowlands, or may even have two different winter ranges, but much remains to be learned.

On the validity of *Coracias caudata suahelica* Neumann, 1907

by P. A. Clancey

Received 4th April, 1966

Since its description in 1907 *Coracias caudata suahelica* Neumann, the type-locality Usagara, Tanganyika, has not been admitted by systematists, and the name seems to have been discussed only twice in the literature, firstly by Grant, *Ibis*, 1915, pp. 261, 262, and secondly by Friedmann, *U.S. Nat. Mus. Bull.*, No. 153, 1930, p. 376. Currently only two races of the Lilac-breasted Roller *C. caudata* are recognised, these being *C. c. caudata* Linnaeus, 1766: Angola, and *C. c. lorti* Shelley, 1885: plateau south of Berbera, northern Somalia, the latter well differentiated on the basis of having the white streaked lilac area of the ventral surface restricted to the fore-throat and adjacent lateral areas. Nominotypical *C. caudata*, as at present understood, occupies the greater part of the species' range, extending from Natal and the Orange River in South Africa, north to Angola, the southern Congo, Uganda, Kenya, and south-western Somalia. A recent study of material from much of the range of the present *C. c. caudata* suggests the existence of an unequivocal basis for Neumann's proposal to sub-divide the typical race of this roller as outlined in *Journ. f. Ornith.*, vol. lv, 1907, p. 593, these investigations now necessitating the critical re-appraisal of *C. c. suahelica*. Neumann, *loc. cit.*, differentiated *C. c. suahelica* from *C. c. caudata* on the grounds of a darker nuance to the blue of the rump, upper tail- and lesser wing-coverts, a character which seems to have eluded later students.

The type-locality of *C. c. suahelica* is Usagara (or Sagara according to the *Times Atlas*, vol. iv, 1956, pl. 92), which general area lies immediately to the south of a line Dodoma–Kilosa in eastern Tanzania. A series of specimens in the collection of the Durban Museum, taken for us in 1964 by Mr. T. E. Irwin, at Kilwa Kivinje and Kilwa Masoko, immediately to the south-east of Sagara and on the coast, differs quite markedly from a like sample from Angola, the type-locality, as follows: frons and supercilia clearer and less buffy white; blue-green of head-top, nape and hind neck darker (Deep Dull Yellow-Green [2], *vide* Ridgway, *Color Standards and Color Nomenclature*, 1912, pl. xxxii, as against Chromium Green [same pl.], the basal surface of each feather less buffy), the tips of the feathers tending to bleach or metamorphose to a clearer, less greenish, blue. Mantle, scapulars and tertials much darker and more saturated olive-brown (Saccardo's Umber [pl. xxix], as opposed to Buffy Brown [pl. xl]), the green fringing duller, less yellow. In the wings, the dark ultramarine is less restricted to the lesser wing-coverts in series, tending to be more bled into the caerulean of the median and greater coverts, while on the lower back and rump the blue is darker (as originally claimed by Neumann) (about

Azurite Blue [pl. ix] as against Smalt Blue [same pl.] in *C. c. caudata*), this also more bled through the upper tail-coverts and less distinctly zoned. There is also a fairly well-marked and convincing size difference, East African coastal birds having the flattened wing (of 10 ♂♀) 159–166 (170) (163.7), in contrast to 166–177 (171.5) mm. in 10 ♂♀ from Angola and northern South-West Africa.

The darker, more olive, less buffy, brown mantle, scapulars and tertials and smaller size seem to be the most reliable criteria of all those listed above in support of the discreteness of *C. c. suahelica*, the range of which appears to be from the coast of Kenya, south through eastern Tanzania to northern Moçambique, southern Malawi (mainly from Chiromo, on the lower Shirè River, where intergrading with *C. c. caudata*), and perhaps as far south on the coast as the Save River in southern Moçambique. Some eastern Zambian specimens (mainly from about Fort Jameson) show a marked shift towards *C. c. suahelica* in having a darker brown dorsal facies, though others from the same locality are typical of *C. c. caudata*. From Inhambane southwards the populations are certainly similar in dorsal coloration to *C. c. caudata*, though many birds are small in size as in *C. c. suahelica*, with the wings 166 mm. and below. The small proportions of many southern Moçambique examples of *C. c. caudata* seem to have no taxonomic significance, however, as many examples with wings in excess of 170 mm. are available from this same region, the dates of which are suggestive that they were not wintering birds of the interior plateau populations in the first instance. It seems the wing-length variable in these littoral populations has a wider spectrum than in those from more western aspects of the range. As the majority of southern Moçambique littoral birds is small sized, it seems that selection is favouring the small sized phenotype in this region, as it likewise does in the populations embraced in *C. c. suahelica*, which is the race of the humid low-lying coastlands of East Africa.

The range of *C. c. caudata* may be redefined as South-West Africa, the northern Cape Province, Bechuanaland, Rhodesia, the Transvaal, northern Orange Free State, Moçambique south of *C. c. suahelica*, Swaziland, Zululand, and Natal (occasional), northwards to Angola, the southern Congo, Zambia, western Malawi, western Tanzania, Uganda, Kenya back from the coast and south of the range of *C. c. lorti*, and south-western Somalia.

For the loan of recently collected specimens from Angola—topotypes of *C. c. caudata*—I am deeply grateful to Dr. A. A. da Rosa Pinto, Ornithologist of the Instituto de Investigação Cientifica de Angola, at Sá da Bandeira, Huila, Angola. I must also thank Mr. T. E. Irwin for his efforts in bringing the Kilwa, Tanzania, series of *C. c. suahelica* together.

A new name for *Geocichla princei graueri* Sassi

by B. P. Hall

Received 24th March, 1966

Prigogine (1965) has shown that *Geocichla princei graueri* Sassi should be regarded as a valid subspecies of *Geokichla camaronensis*.

Many authors submerge *Geokichla* in *Turdus*. When this is done *graueri*

Sassi 1914 is pre-occupied by *Turdus graueri* Neumann 1908 (now *Turdus pelios graueri*).

Sassi's bird therefore requires a new name and I propose:—

Turdus camaronensis prigoginei nom. nov.

for *Geocichla princei graueri* Sassi 1914, Anz. Akad. Wien, 28: 309—Moera, west of Semliki, Belgian Congo.

Reference:
Prigogine, A. 1965 *Rev. Zool. Bot. Afr.* 71: 230–235.

Symmetrical albinism in a Skylark

by John H. Barrett

Received 20th January, 1966

Harrison's contribution (1966) under this heading prompted me to refer to my notes and I find that on 28th December, 1946, at Spurn Point, E. Yorkshire, one of a party of about 15 Skylarks, *Alauda arvensis*, had all the primaries in both wings and the two outer tail feathers on both sides white, giving a precisely symmetrical pattern.

Furthermore I recall that, against all the protestations of the late Ralph Chislett, an army officer of some standing so insisted that this bird was a White-winged Lark that Chislett had to be persuaded at a later meeting that he really ought to resume recognition of the gallant gentleman.

Reference:
Harrison, James M. 1966. A case of symmetrical albinism in a Skylark. *Bull. B.O.C.* 86: 11–15.

A new race of the flycatcher *Batis molitor* from Angola

by Walter J. Lawson

Received 19th April, 1966

A revision of the species of the genus *Batis* Boie is at present in an advanced stage of preparation, and not wishing to include the formal descriptions of new subspecies in this work, I here describe a new subspecies of *Batis molitor* (Hahn & Küster); Baviaan's River, eastern Cape Province.

Batis molitor pintoi subsp. nov.

Type: ♂ adult, from Fazenda do Cuito, (Moco), Angola, altitude 1620 m., in *Brachystegia* veld, collected by Dr. A. A. da Rosa Pinto on the 19th June, 1964. In the collection of the Instituto de Investigacao Cientifica de Angola, Sá da Bandeira, Angola, Reg. No. 8209.

Diagnosis: Male: Head-top and mantle dark grey, only slightly darker than in the nominate race but considerably darker than in *B. m. palliditergum* Clancey: Sand River, east of Newington, eastern Transvaal and *B. m. puella* Reichenow: Bussisi, southern shore of Lake Nyanza. The head-top is also suffused with metallic blue-black, somewhat greener in hue than in *B. m. molitor*, and chest band also greener, not blue-black as in *B. m. molitor*, *B. m. palliditergum* and *B. m. puella.* Also averages somewhat larger in size of wing and tail than these three subspecies.

Female: Head-top and mantle darker grey than in nominate race, *B. m. pallidtergum* and *B. m. puella*. No gloss on the mantle or head-top. But mantle more heavily suffused with black than in other three races and also averaging somewhat larger in size of wing.

In general appearance both males and females are considerably blacker on the upperparts than any of the subspecies adjacent to them but resembles *B. m. mystica* Neumann: Kikumbuliu, Ukamba, in this feature, but is separated from that taxon by the populations of *B. m. puella*. Both males and females average larger in size than the adjacent populations of other taxa.

Measurements: 35 ♂♂ wing 61.0–69.0 (65.4), tail 41.0–47.0 (45.4); 24 ♀♀ wing 58.0–67.5 (64.2), tail 41.5–46.5 (44.0) compared with *B. m. palliditergum* which is 57 ♂♂ wing 57.0–65.0 (61.9), tail 41.0–50.0 (44.9); 51 ♀♀ wing 55.0–64.5 (61.3), tail 40.0–48.5 (44.4) and *B. m. puella* which is 20 ♂♂ wing 60.0–66.0 (62.8), tail 40.0–46.5 (43.0); 25 ♀♀ wing 58.0–64.0 (61.0), tail 40.0–45.0 (42.5) mm.

Material: 59 (Angola 50, from Gambos, Fazenda do Cuito, Humpata, Caluando R., Nova Lisboa, Ruinas, Mulundo, Ambande, Nongombe, Cacupa, Huila, Caconda, Bihe, N. Bailundu, Mt. Moco, Amboiva, Tchamutete, Luimbale, Luhanda and N'Gungo; Zambia 9, Mayau, S. Lueti R., Mwinilunga, Luiwa Plain, and Chifuwe.)

Measurements of type: wing 69.0, tail 44.5, culmen 15.5 mm.

Range: Angola except in the extreme south and east, and in extreme north-western Zambia. *B. m. palliditergum* ranges from the eastern Transvaal, Rhodesia, northern Bechuanaland, northern South West Africa and southern Angola (Cassinga, Jundavala, Mupanda, Palanca) where it intergrades with *B. m. pintoi. B. m. puella* extends from the lowlands of Kenya and Tanzania to Zambia and extreme eastern Angola (Lago Cameia, Luacano) where it intergrades with *B. m. pintoi.*

Remarks: This new subspecies of *Batis molitor* from Angola is named for Dr. Antonio A. da Rosa Pinto, Onithologist of the Instituto de Investigacao Cientifica de Angola, Sá da Bandeira, Angola.

Further systematic notes on Mexican birds

by Allan R. Phillips

(*continued from page 112*)

Certhia familiaris molinensis subsp. nov.

Description: Rump darkest of all American races, usually dull Chestnut, but paler individuals (all immatures?) Argus Brown, somewhat toward Burnt Sienna. Upperparts otherwise resemble the rich rufescent coastal races from Guatemala to Jalisco (*pernigra* Griscom, 1935: Volcán de Fuego, Guatemala; *guerrerensis* van Rossem, 1939), but show somewhat more contrast, *i.e.* more white on the back and blacker crowns. Thus richer above than *alticola* G. S. Miller, 1895: Las Vigas, Veracruz, or *jaliscensis* Miller and Griscom, 1925: Volcán de Nieve, southern Jalisco. Flanks averaging richest, most tawny, of the races.

Types: original nos. 5993, 7627, 7732, and 7796 ♂♂, 7674 imm. ♂, and 7647 ad. ♀; Río Molino, as above, 29 Nov. 1961 and 7, 12, 14, 9, and 8 Nov. 1964. Collectors: A. Phillips, J. Nava (2), S. Farfán (2), J. Nava.

Measurements of types: ♂♂, length 133–141 [+; part of tail missing]; extent 195±; wing 62.2–65; tail 58.6, 61; bill 11.5–12.5; imm. ♂, wing 62 (tail worn), bill 11.5; ad. ♀, length 138, extent 197, wing 61.9, tail 59.7 (one rectrix 61), bill 11.7 mm.

Material examined: 11 specimens, all from Río Molino.

Remarks: (CAS, CM, HCL, KANU, LA, MICH, MIN, RTM, US, WF). The considerable local colour- and size-variations from Guatemala to north-western Jalisco and Veracruz are so random and non-clinal that recognition of races is difficult, aside from *molinensis*. Birds from the Pacific coastal ranges are usually rich, but I have one from east of Acahuizotla, Guerrero, that is quite blackish and neutral above. Birds from the interior (Nevado de Colima eastward) are generally duller, but two from Michoacán (west of Cd. Hidalgo, KANU) seem rich. The smallest birds are from opposite extremes of this area: San Sebastián, Jalisco (my collection; very richly coloured) and Sierra de las Minas, Guatemala (HCL). Thus the characters of *pernigra*, *guerrerensis*, and *jaliscensis* are rather elusive.

Cinclus mexicanus dickermani subsp. nov.

Description: Sootiest, least brown or pale, of the races on crown, forehead, lores, and especially chin and upper throat; near Clove Brown. Body dark as in *C. m. mexicanus* Swainson, 1827: Temascaltepec, México, but seems clearest (bluest, least brown-tinged) grey of races except *anthonyi* Griscom, 1930: east of Nentón, Guatemala; "foxing" may be involved, however.

Types: original nos. 5995–5998 imm. ♂ ad. ♂ ad. ♀ imm. ♀; Río Molino, as above, 29 and (5998) 30 Nov. 1961; netted and prepared by Ciro González B.

Measurements of types: respectively, length 206, 209, 193, 185 [+]; extent 316, 306, 287, 281; wing 93, 92.2, 85.5, 85; tail 49.7, 52,7, 47, 42.8 [+; one rectrix longer].

Material examined: 7, all from Río Molino; also 1 juv. from Río Jalatengo, to south.

Remarks: (AMNH, CAS, CM, KANU, MICH, MIN, MSU, RTM, US, WF). This race is named in honour of Dr. Robert W. Dickerman, outstanding expert on Mexican birds, especially of aquatic habitats. As stated by Blake and Hanson (1942), post-mortem changes are serious; but I have seen several recent *mexicanus*, including 3 taken in the autumn of 1963 (south-western Chihuahua, WF). I perceive none of the colour characters claimed by Griscom for *anthonyi*, but all specimens from Chiapas to Honduras show a greater *contrast* of dark crown to paler back, as remarked by Hellmayr (1934).

Henicorhina leucophrys minuscula subsp. nov.

Description: A pale race like *H. l. festiva* Nelson, 1903: Omiltemi, Guerrero, but smaller.

Distribution: Mountains of trans-Volcanic belt of central México, from western border of Estado de México west to the Pacific (type locality).

Types: original nos. 5082–83 and 5511 ♂♀ (mates) and ♂ imm.; Sierra de Autlán 5 km. by road (and just, 5511) south-west of Los Corralitos, south of Ahuacapán, south-western Jalisco, 24 Feb. and (5511) 31 Dec. 1959. (5082–83 prepared by W. J. Schaldach, Jr.'s assistants.)

Measurements of types: length 118, 114, —; extent 175, 166, —; wing 51.9, 48.2, 51.7; tail 29, 27, 26.5 mm.

Material examined: (LSU, RTM, WF) series from type locality and from Puerto Lengua de Vaca, on México—Michoacán border; also 1 from Puerto Morillos, eastern Michoacán, and 2 from north-west slope of Cerro Nevado de Colima, Jalisco (see Schaldach, 1963).

Remarks: My south-western Oaxaca *festiva* measure: 8 ♂, wing 53.8–57, tail 29.2 (29 April 1962, worn?) and 30.5–33; 6♀, 50.5–54.8 and 28–29.2 mm. Guerrero specimens that seem correctly sexed are fairly similar except for the longer tails of ♀♀ (29.5–31.5). Additional Jalisco specimens resemble the types except for a juvenile with tail over 30. México—Michoacán border ♂♂ have wing 51, 54.1, tail 27.5, 30; ♀♀ are 47.8–51, 24.5–28 mm.

Catherpes mexicanus cantator subsp. nov.

Description: Smaller than *C. m. mexicanus* Swainson, 1829: Real del Monte, Hidalgo, but as dark or darker; bill more slender. 4 ♂, wing 60.4–63.5; tail 48.3 (+ ? central rectrices missing), 51.6–53.5 mm.

Types: original nos. 4359–4360 ad. ♀ ad. ♂ (mates); south end (top) of Cerro de Buena Vista, 5 km. W. of Compostela, Nayarit, 11 Nov. 1956; collected by A. R. Phillips.

Measurement of types: respectively, length 153, 158; extent 191 (—?), 204; wing 60.7, 63.5; tail 54, 52.5; bill 15, 17 mm. Weight 13.8, 15.1 grammes.

Material examined: 4 ♂ 1 ♀, all from type locality and Tepic.

Remarks: ♂ *mexicanus* usually measure: wing 65–69, tail 55–59. (AMNH, LDY, RTM, WF). Dark birds occur north to southern Zacatecas, at least, but the darkest seen (especially on back and tail) are from the coastal regions from Tepic south and east to Guerrero. Birds from Sinaloa northward are small and pale, especially on crown and tail, and are probably best called *conspersus* Ridgway, 1873: Fort Churchill, Nevada. Recent authors (van Rossem, 1945b; Paynter, 1960) err in synonymizing *meliphonus* Oberholser, 1930: Alamos, Sonora, with the nominate race.

Turdus grayi linnaei subsp. nov.

Description: Palest and greyest race known. Upperparts near Olive-Brown, or varying thence toward Saccardo's Umber. Chest much paler than Light Brownish Olive, occasionally near pale Buffy Brown. Belly Pale Ochraceous Buff x Cream Buff. Flanks pale Isabella Color. Thus nearest *T. g. tamaulipensis* (Nelson), 1897: Cd. Victoria, Tamaulipas, but duller, greyer throughout.

Distribution: Arid central valley of Chiapas (and open pinelands to north), at least in its upper part at and near the Guatemala border.

Types: 1 "♀?" [= ♀ imm.] 1 ♀ ad. 1 ♂ [ad.] 1 ♀ [imm.]; Las Delicias, municipio de La Trinitaria, Chiapas (*ca.* lat. 15° 57′ N., long. 91° 49′ 20″ W.), 7, 16 (2), and 18 Oct. 1964; collected by Abraham Ramírez V.

Measurements of types: wing 120.7, 131.8, 126, 124.1; tail 100, 113, 107, 102.1 mm.

Material examined: 6 more topotypes; 1 from bend of Guatemala border farther north (Vértice de Santiago); and 1 (WF 9448) from Río San Gregorio 40 km. south and 20 km. west or south-west of Comitán.

Remarks: In naming this distinctive race, I am mindful of the extraordinary ignorance of some of our highest-placed biologists today of our enormous debt to the great Carl von Linné, and of how few birds commemorate this debt.

(CM, LSU, MIN, RTM, WF, YU) The "*T. g. grayi*" reported by A. H. Miller from nearby Ciudad Las Casas (Miller *et al.*, "1957"; RTM) is actually *T. infuscatus*! Griscom (1930) erred in restricting the type locality of *grayi* to Alta Vera Paz (see *Euphonia hirundinacea*). *Grayi* is an earlier name for *T. g. umbrinus* Griscom, 1930: near Mazatenango, Pacific slope, Guatemala; for *grayi auctorum* the synonym *megas* Miller and Griscom, 1925: Matagalpa, Nicaragua, is available.

Myadestes obscurus deignani subsp. nov.

Description: A large, dark greyish form much like *M. o. occidentalis* Stejneger, 1882: "Tonila" [=Cerro Nevado de Colima?], Jalisco, but slightly darker on crown, nape, chest and flanks; upper tail-coverts and rump more slaty (latter less brownish than in *M. o. obscurus* Lafresnaye, 1839: México [=probably Xalapa, Veracruz]). The blackish sub-basal part of the secondaries is also larger, hence usually obvious in the folded wing; and the supraloral line is usually less whitish. Larger than *M. o. oberholseri* Dickey and van Rossem, 1925: Volcán de San Rafael, El Salvador, as described (not examined).

Distribution: Mountains of south-western Oaxaca and possibly northern Chiapas (though the latter populations are still darker above.)

Types: Original nos. 7988, 8105, and 8142 ad. ♂ [ad.] ♂ imm. ♂; km. 181–183.8 (*cf. Micrastur*), 30 November and 5 and 9 December, 1964; Santos Farfán B. (8105 collected by A. R. Phillips).

Measurement of types: Respectively, length 215 [+?], 224.5, 218; extent —, 319±, 308; wing 98, 100, 98.5; tail 92, 96, 95 mm.

Material examined: Ten from Oaxaca. (3 from Chiapas = Pueblo Nuevo Solistahuacán and (2) bend of Guatemala border.)

Remarks: (LDY, MIN, RTM, US). This lovely songster is named for H. G. Deignan, in recognition of the great value of his work; as far as North America is concerned, especially his important study (1961) of the type specimens preserved in the United States National Museum.

Peucedramus taeniatus georgei subsp. nov.

Description: adult ♂ similar to *P. t. taeniatus* (Du Bus), 1847: "Mexique" = "Tabasco" (*i.e.* Jitotol, Chiapas, or a bit north); *cf.* Rovirosa, 1889, in dull grey upperparts with deep sooty upper tail-coverts; but crown scarcely if at all paler than *P. t. arizonae* Miller and Griscom, 1925: Chiricahua Mountains, Arizona, being Mars Yellow (not Yellow Ocher approaching either Deep Chrome or Light Cadmium); chest intermediate, near the palest *arizonae*, Raw Sienna (*taeniatus* is usually nearer Yellow Ocher). Flanks also near the dullest, greyest *arizonae*, not as cold greyish as *taeniatus* but less washed with brownish olive than *P. t. jaliscensis* Miller and Griscom, 1925: "Zapotlán" [Cerro, Nevado de Colima], Jalisco, or the (identical?) *giraudi* Zimmer, 1948: Las Vigas, Veracruz.

Types: Original nos. 7725 and 7786 ♂♂ ads.; Río Molino, as above, 12th and 14th November, 1964; collected by A. R. Phillips, prepared by J. Nava S.

Measurements of types: Length 135, 137; extent 225, 225; wing 74.5, 73.5; tail 54, 53.2 mm.

Material examined: 2 ♂ ad. 2 ♂ imm. 1 ♀ imm., all from the mountains south of Miahuatlán, Oaxaca.

Remarks: (RTM). This race may appropriately be dedicated to Dr. William George, whose brilliant study (1962) dissociated *Peucedramus* from the Parulidae, in which it had always been placed; in fact Griscom (1957) had united it with *Dendroica*. It was re-assigned to the Sylviidae by Phillips, Marshall, and Monson (1964).

I agree with Webster (1962) that the slightly paler back of Oaxaca birds, compared to *taeniatus*, is a poor taxonomic character, and that *georgei* is near *taeniatus* generally; but its definite combination of characters warrants recognition. Birds of northern Oaxaca and Guerrero, not seen by me, are probably also *georgei*, *fide* Webster.

Ptilogonys cinereus schistaceus subsp. nov.

Description: ♂ like *P. c. cinereus* Swainson, 1824: "Mexico" [= Distrito Federal?]; ♀ duller and greyer on chest and sides (usually not distinctly brownish like ♀ *cinereus*), and thus in less contrast to throat and cheeks. Rump also slightly greyer brown.

Types: Original nos. 7734 and 7908, ad. ♀ imm. ♀; Río Molino, as above, 12th and 22nd November, 1964; J. Nava S. (7908 prepared by Santos Farfán B.).

Measurement of types: Length 214, 209; extent 291.5, 286; wing 91, 90; tail 89.3, 91.5 mm.

Material examined: 7 ♂ 5 ♀, all from the mountains south of Miahuatlán.

Remarks: (CAS, LDY, MICH, MIN, RTM, US). *P. c. pallescens* Griscom, 1934: Chilpancingo, Guerrero, seems to be a synonym of *cinereus*; none of its various alleged characters is "readily appreciable" to me. Material seen of *P. c. otofuscus* Moore, 1935: Arroyo Hondo, south-western Chihuahua, is all worn and taxonomically worthless.

Vireo huttoni pacificus subsp. nov.

Description: The brightest, most olive-tinged, least grey (or brown-cheeked) of all the races of the Mexican mainland and Central America; sides of head, rump, and edgings of remiges yellowest. Underparts pale, though darker than *V. h. stephensi* Brewster, 1882; Chiricahua Mountains, Arizona, and *V. h. carolinae* Brandt, 1938; Chisos Mountains, Texas.

Distribution: Mountains fronting the Pacific Coast of México from Nayarit to south-western Oaxaca.

Types: Original nos. 3749, 4065; ♂, ad. ♂; Cerro San Juan, 9½ km. by road west, and south of (above), Tepic, Nayarit, 3rd February and 12th October, 1955. A. R. Phillips.

Measurements of types: Length 137, 133; extent 217, 213; wing 68.2, 68.5; tail 52.5, 50.8 mm.

Material examined: Also 2, Río Molino, Oaxaca; 1, Omiltemi, Guerrero; 2, Sierra de Autlán, Jalisco.

Remarks: (RTM, US, WF). In the limited fresh material seen from Chiapas and Guatemala there seem to be two races, neither of which closely resembles *pacificus.* I cannot confirm anything written about this species by Griscom (1930); nor can I imagine why a comparison of "breeding adults" with "young" (in a sedentary species!) should be thought to have any value.

Basileuterus culicivorus ridgwayi subsp. nov.

Description: Nearest *B. c. flavescens* Ridgway, 1902: San Sebastián, Jalisco, in brightness of pale head-stripes (except the posterior part of the superciliary, above the auriculars); but occiput, nape, and back less yellow, though still paler than the dull *B. c. culicivorus* W. Deppe, 1830: México = Xalapa, Veracruz, and with the occiput and nape more yellow-green, less washed with sooty, and thus more contrasted to the back than in *culicivorus.*

Distribution: Pacific foothills from type locality east to at least Pijijiapan, Chiapas.

Types: Original Nos. 7364 and 7366 (mates), and 7367 and 7351; ♀ [ad.?], ♂ imm., ♂ [ad.], ♂ (imm.?); above = just NNW. and (7351) north of San Gabriel Mixtepec, Oaxaca (see *Micrastur*), 13 and (7351) 12 Dec. 1963; collected by A. R. Phillips and prepared by Juan Nava S.

Measurements of types: Length 137, 143, 140, 141 (+?); extent 185, 194, 188, 198 [+]; wing 57.2, 60.7, 60, 61; tail 53.5, 58, 56.8, 56.7 mm.

Material examined: Also three others from south-western Oaxaca and three from 6 km. east of Pijijiapan, Chiapas.

Remarks: (CM, MIN, RTM, WF). While there is no scarcity of birds named for Robert Ridgway, it is appropriate to commemorate again our tremendous debt to him in so many fields, prominent among which is the taxonomy of this genus.

There is a considerable gap in the known range of this species between Colima (see Schaldach, 1963) and the type locality of *ridgwayi.* The Chiapas specimens listed above are not typical, being duller on the head and apparently paler on the post-ocular stripe (upper part of the auriculars). A 22 August ♂ from Salto de Agua, Escuintla (farther east in Pacific Chiapas) seems to be *B. c. culicivorus,* if not soiled.

Icterus gularis flavescens subsp. nov.

Description: The palest and yellowest race I have seen. Near *I. g. gularis* Wagler, 1829: México=Tehuantepec, Oaxaca, in size, but differs further in more extensive white on edgings of secondaries and their greater coverts. Ad. ♂♂, tail 106 [+?]–112, bill 17.7–20.5; ♀♀, tail 100 (±)–104 (±); bill 18.1–18.9 mm. March ♀ near dull Light Cadmium, rest of series approaching Cadmium Yellow; none near the Orange of *gularis.*

Distribution: Coast of Guerrero, México.

Types: ♂ ad., ♀ ad.; just south of Tierra Colorada, Guerrero, 7th and 28th March, 1963; Sóstenes Romero H.

Measurements of types: Wing 124.2, 116.2; tail 109.7 [+?], 104 (±); bill 20.5, 18.8 mm.

Material examined: Also 2 ♂ ad. 1 ♀ ad. 1 one-year-old ♀, Tres Palos and vicinity (east of Acapulco), Sept. 1965 (all still moulting primaries).

Remarks: This, the palest, is the westernmost race of the species.

(*to be continued*)

The roosting of the Pied Wagtail in Dublin

by Jeffery Boswall

Received 19th January, 1966

The roost of *Motacilla alba yarrelli* in the centre of Dublin's fair city is certainly the best-known dormitory in Britain and Ireland of the Pied Wagtail, and is also one of the largest.

Observations were made at the site in O'Connell Street, Dublin, in 1964 as follows: 4th February, 16.45–18.15 hours G.M.T.; 13th March, 19.00–19.30; 14th March, 17.45–18.47 from the top of the Nelson Pillar with C. K. Mylne; 15th March, 17.44–18.55 with Miss Anne Deane; 24th March, 17.40–19.30; and 25th March, 05.25–06.20.

DIRECTION OF ORIGIN OF BIRDS

From the top of the Nelson Pillar, whose parapet was* 160 feet above street level, an attempt was made to determine the direction from which the birds approached the roost during the first part of the assembly period on 14th March. A note was made of the size of flocks and the direction from which all apparently newly-arrived birds came. The word "apparently" is used because it is difficult to be certain that the observer always spots the birds as they actually arrive in the area; he may pick them out only after they have started to circle, which some do. All birds thought to be in this latter category are excluded from the analysis below. It is thought that the figures given reflect a true situation but it is difficult to be certain.

Table 1

Directions from which some Pied Wagtails appeared to approach O'Connell Street, Dublin, 18.00–18.35 *G.M.T.,* 14*th March,* 1964

N.E.	E.	S.E.	S.	S.W.	W.	N.W.	N.
	7	10	13	14	5	10	30
	9	15	4	5	9	9	6
			1		5	13	
			20		1	13	
			3		3		
			1		1		
			9		5		
			3		3		
—	16	25	55	19	32	45	36

As might be expected for a roost near an eastward-facing coast, few flew in from the east, and most appeared to approach from the south and from points west.

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*The past tense is used because the pillar was destroyed as a political act at 01·32 hrs. on 9th March, 1966. It is to be hoped that the roosting wagtails were not unduly disturbed.

THE ASSEMBLY

The birds approach the general area of the roost usually flying at roughly 200 feet above street level. Some birds or flocks may fly around, normally for not more than 60 or 90 seconds, before dropping down either into the trees down the centre of the street or roof tops and television aerials. Others will fly in and drop directly to any of the perches described. These observations were made from the top of the Nelson Pillar on 14th March.

On an earlier evening at a time when the birds were still coming in (17.28–17.40 on 4th February), I inspected each of the eleven Plane trees in O'Connell Street, starting with the southernmost, and found the following numbers of birds: 47, 82, 72, 1, 9, 4, 4, 1, 3, 1, and 2. Eventually the birds gathered to roost only in the three southernmost trees. This shows clearly that not all the birds fly directly to their perches.

On 15th March, when both observers stood on the pavement opposite the one tree in which all the birds were to collect for the night, and remained there throughout the assembly time, it was evident that most but not all the birds which alighted in the tree stayed put; a few took off again, presumably returning later. The departures from the tree—as well as the arrivals—per five minutes are shown in Table 2, the total being 69. Most of these merely flew up to join other birds assembling on a nearby rooftop, but one party of ten took off to the south, early, at 18.02, and disappeared behind some buildings several hundred yards away. As one might expect, most of these birds which left the tree did so during the earlier part of the assembly period while it was still reasonably light and before the major influx of birds (see Table 2).

Table 2

Numbers of Pied Wagtails entering (and departing from) roosting tree, O'Connell Street, Dublin

	15th March 1964				*24th March* 1964			
G.M.T. 5 mins. ending	*Ent.*	*Dep.*	*Bal.*	*Acc. total*	*Ent.*	*Ded.*	*Bal.*	*Acc. total*
17.45	2		2	2				
17.50	2		2	4				
17.55	10		10	14	13	1	12	12
18.00	6	10	–4	10	9		9	21
18.05	20	1	19	29	9		9	30
18.10	43	36	7	36	37		37	67
18.15	74	11	63	99	50	2	48	115
18.20	76	2	74	173	106	10	96	211
18.25	184	5	179	352	71	11	60	271
18.30	247	2	245	597	48	12	36	307
18.35	160	1	159	756	58	7	51	358
18.40	44		44	800	39	5	34	392
18.45	6	1	5	805	57	2	55	447
18.50					57		57	504
18.55					54		54	558
19.00					7		7	565
Totals	874	69	805	805	615	50	565	565

Attempts were made on 15th and 24th March to note down, from street level, the time at which all the birds, as singles or parties, entered the tree.

Table 2 shows the numbers of birds entering and leaving the tree each five minutes, with the balance and accumulated total at the end of each five minutes.

On both evenings there was complete cloud cover but at a good altitude, leaving a fairly bright sky. On 15th March the first bird alighted at 17.45 (sunset being at 18.06) and the last bird 62 minutes later at 18.47. As the table shows, the rate of arrival rose fairly steadily during the first 45 minutes, came to a peak during the next 5 minutes and then dropped sharply. The arrivals pattern on 24th March was much more irregular and on that date the birds took 68 minutes to arrive, from 17.55 to 18.03, the sun setting at 18.10.

That the assembly time of this species can vary with light intensity has been shown by Rappe's studies of an urban roost of some 700 birds on the outskirts of Leopoldsburg in Belgium (Rappe, 1960). A sky covered with grey-black clouds put forward the arrival of the wagtails by about a dozen minutes.

For a number of species, for example the Wren (*Troglodytes troglodytes*) (Armstrong, 1955), it is known that the birds retire later in relation to sunset (or civic twilight) on shorter days in winter, presumably because they need the additional time to get enough food. To my knowledge, no systematic work has been done on *Motacilla alba* to demonstrate this, but Moffat (1931) writing of the Dublin assembly does say "It generally began about 20 (or in the shorter days, 23) minutes after sunset, from which time arrivals continued to take place in quick succession for the next twenty minutes."

TABLE 3

To show numbers of parties by size of Pied Wagtails entering roosting tree, Dublin, 15th March, 1964

No. of birds in party:	1	2–10	11–20	21–30	*Total no. of parties*	*Total no. of birds*	*Average party size*
G.M.T. 10 *mins. ending*							
17.54	4				4	4	1.0
18.04	9	1			10	16	1.6
18.14	12	15			27	63	2.3
18.24	26	25	2		53	150	2.8
18.34	49	38	8	3	98	431	4.4
18.44	33	28	3		64	204	3.2
18.54	6				6	6	1.0
Totals	139	107	13	3	262	874	3.3
Individual birds	139	452	207	76		874	

On 15th and 24th March respectively my first birds arrived 21 and 15 minutes before sunset. However, first arrivals could easily be misleading, depending as they do on the behaviour of one or a few birds. A comparison of peak arrival times is likely to be more revealing and it is here that systematic observations over a period of weeks are demanded.

It will be noticed in Table 3 that the average size of party varies with the numbers of birds arriving per unit time; or, in other words, when birds are arriving at a greater rate, they arrive in bigger parties. If, as general observation seems to indicate, the Pied Wagtial is a solitary, or near solitary feeder by day (certainly the White Wagtail (*M. a. alba*) is in winter quarters—see Simmons, 1965) and if, as seems likely, light intensity is the proximate factor causing assembly, then the simplest explanation of varying party size on arrival at the roost site is that the birds meet *en route*. Though not referring specifically to the Dublin roost, Kennedy *et al.* (1954) state ''On the flight line to roosts and some distance from their destination birds halt in large numbers''. Pre-roost assembly points have been observed for a Hampshire roost by Keith Edwards (pers. comm.), but the small size of the parties arriving in the roost site area at Dublin is hardly consistent with large pre-roost assemblies.

THE NUMBERS

I made counts of the settled birds after dark on the evening of 4th February, when there were 918, and on 13th March, when there were 894. On 15th March an attempt to count the birds as they entered the tree gave a total of 805.

On 24th/25th March the birds were counted three times: entering, settled in the evening, and dispersing in the morning; the totals were 565, 610 and 572 respectively. (David Cabot [*in litt.*] on the night of 2nd April, 1964, made two counts and arrived at a figure of "550–600".)

On all nights except the first all the birds occupied the Plane tree nearest to the Nelson Pillar. On the earliest date, 4th February, 452 birds settled for the night in the nearest tree, 462 in the next and 4 in the third.

The method of counting the perched birds was to stand in one position between each tree in turn and to imagine all the branches of the tree to be in a single plane. Birds were then counted in each "area" between the more prominent branches; the maximum number of birds counted in any one "area" was 87. Two "areas" I counted thrice each, to gain an indication of accuracy, and the figures were: 57, 55 and 59; and 42, 40, 42. To each of the totals of birds as counted it seems reasonable to add 5 per cent to account for the birds hidden behind branches. Thus the corrected figures for the *settled* birds become *c.* 964 on 4th February, *c.* 938 on 13th March and *c.* 641 on 24th March.

Totals for the birds counted as they entered the roost were arrived at by noting each bird or party as it alighted in the tree, totting up and subtracting the number of birds noted leaving the tree (presumably temporarily) during the period of the assembly. Birds dispersing in the morning were counted as they took off from the tree. It is likely that some birds entering or leaving the tree on the side furthest from the observer were missed and this could explain why in the two cases where counts of settled birds can reasonably be compared with those of active birds, the "settled bird" totals are higher. We can gain some hint of the overall accuracy of the figures by making this comparison: *c.* 641 settled on 24th March is encouragingly close to the 565 entering an hour before, and the 572 dispersing in the morning.

I would estimate that the totals for assembled birds are accurate to plus or minus 10 per cent and those for the active birds rather less so. The point does emerge that the assembly behaviour of the species, if Dublin is not atypical, does allow—by comparison with species that arrive in large flocks—for a reasonably accurate count to be made of birds as they assemble, which would normally be the only time when they would be visible: in Dublin, the ornithologist, with street lights to help him, is in the rare position of being able to count the birds once they've settled down! As Hutson (1956) says in a discussion of the study of bird roosting. "Few attempts have yet been made to continue observations after the birds have settled down for the night."

The figure of nearly a thousand birds in February, 1964, may be compared with earlier estimates at the same roost. There were over 100 birds in November, 1929 (Williams 1930 and Moffat 1931), but the roost was deserted early in December. The maximum in 1930/31 was "at the very least . . . over 500 birds" on 24th December (Moffat 1931); and in 1931/32 "there were certainly well over a thousand birds, probably not far from fifteen hundred"; this was from mid-October to about the end of December (Moffat 1932). At the end of 1933 there were "fully 2,000 birds" (Moffat 1934b), and a year later the same number was estimated (Moffat 1935). In 1948 Scroop estimated about a thousand birds in each of the three trees, and in November, 1950, John Barrington considered that 3,600 were present (Kennedy *et al.* 1954).

On 3rd September 1952 Stanley Cramp (*in litt.*) saw a roost in two trees on Burgh Quay at the corner of O'Connell Street several hundred yards from the site of the main roost. "Not counted, but certainly not more than a few hundred."

A roost of 3,600 Pied Wagtails is the second biggest on record, to the best of my knowledge (and I have searched the literature fairly thoroughly). The only other roosts of this species which exceed a thousand birds are as follows:

1. At least 2,000 in a reed bed on the Medway near Snodland (grid ref. 718607) in September 1963, and an estimated 5,000 there during the first half of September 1964. In 1965 the numbers built up from 200 in August to 2,000 in September, then moved to another site about one-third of a mile to the north and increased to 3,000 by the end of September. There were still 1,000 birds there on 1st December (Eric Philp *in litt.*).
2. The maximum estimated at a roost inside Power Station 'A' at Ferrybridge, near Castleford, Yorkshire, a site occupied for several years, was 2,500-plus (C. Winn, *in litt.*).
3. Greaves (1941), who studied the behaviour of the nominate race of this species in winter quarters in Egypt, states ". . . there was no doubt that on favourable occasions a single observer might see as many as 2,000."
4. Keywood (1937), describing a reed bed dormitory at the Black Pond, Esher, Surrey, says that there ". . . must have been several thousand."
5. A roost of 1,000-plus was seen at a Preston factory on 24th November 1962. Many of the birds came into a room, and settled to roost on steelwork and lagged steam pipes (N. Harwood *in* Spencer 1962).
6. Meinertzahgen (1940), referring to a roost he watched in Cornwall in April 1922 says, "Their numbers must have reached four figures."

It is possible that my early 1964 figures were low because the Pied Wagtail population was severely reduced by the hard winter of early 1963. J. Asbee, who has followed since 1958 the fortunes of a reed bed roost near

Rye in Sussex which normally holds up to 200 birds, found that in the autumn of 1963 it held only 50–60 birds (*Sussex Bird Report* 1964 and *in litt.*). A glasshouse roost in Somerset, normally occupied by anything up to 100+ birds from July to September, was hardly tenanted at all in 1963 (Sarah Padden, pers. comm.).

If the Dublin roost can hold up to 3,600 birds, it is interesting to speculate firstly on their origin—*i.e.* where they were hatched—and secondly on how far they range each day. Bannerman (1963) quotes Lack's suggestion that some British Pied Wagtails might migrate to Ireland. Kennedy *et al.* (1954) state that there is ''ample testimony from light station on the south and east coasts that a considerable immigration takes place in autumn''. But Peter Davis (*in litt.*, August 1965) tells me: ''There is no evidence from ringing recoveries that any British birds move into or through Ireland . . . I can't think of evidence from any source that British Pied Wagtails move west across the Irish Sea; but this doesn't mean that it never happens. I think it very likely that the Dublin roost is composed entirely of Irish birds; the species would appear to be pretty common there and no very great area would need to be drawn upon to provide 3,600 birds.''

THE DISPERSAL

On the morning of 25th March I counted the birds as they left the tree. The first individual flew to a nearby building at 05.34 and the last birds, a party of three, rose from the branches at 06.17, a period of 43 minutes. Once having left the tree, no birds were seen to return to it. The numbers departing in five-minute periods, and also the size of the parties, are shown in Table 4.

TABLE 4

To show numbers of parties by size and the total numbers of Pied Wagtails dispersing from roosting tree, Dublin, 25th March 1964

Party size: *G.M.T. 5 mins. ending*	1	2–10	11–20	21–30	31–40	*Total parties*	*Total birds*	*Average party size*
05.30	1					1	1	1.0
05.35	2					2	2	1.0
05.40	4	2				6	9	1.5
05.45	9	2				11	16	1.5
05.50	8	12	2	2	1	25	183	7.3
05.55	9	3	4	4	1	21	225	10.7
06.00	2	5	2	1		10	72	7.2
06.05	—	3	2			5	47	9.4
06.10	2	2				4	14	3.5
06.15	—	1				1	3	3.0
Totals	37	30	10	7	2	86	572	6.7
Individuals	37	122	152	186	75		572	

When I arrived at 05.25 the birds were as "settled" as when I had left them the previous evening. It was still fairly dark, though the sky was quite cloudless. The occasional bird moved from branch to branch and one party of five or six moved together a few feet. From 05.41 onwards, and until the tree was empty, the birds started to move branch by branch upwards within the tree, preparatory to taking off from one of the outermost branches of the crown. The first twelve or so birds flew to the adjacent buildings. The first to rise high from the tree and set out purposively were five birds between 05.45 and 05.49. After this, the great majority flew directly away into the wind, though some birds continued to pause on the buildings and one small party that did so later took off to join a sizeable flock as it rose from the tree, and the whole group flew strongly away.

Comparing the assembly with the dispersal, we find that (*a*) the fly-out is accomplished in much less time, which is apparently true of other species (Hutson 1956), and that (*b*) the average party size of departing birds is twice as large.

VOCAL BEHAVIOUR

When approaching the roost, flying round, or actually entering, the birds utter the familiar "chisick" flight-call; these calls were heard particularly from the top of the Nelson Pillar but also from ground level in O'Connell Street.

The birds call as they gather in the tree, creating a distinctive evening chorus. My notes on this on the evening of 15th March, with times and approximate numbers of birds are as follows:

G.M.T.	*Degree of vocalisation*	*Approx. no. of birds in tree*
18.06	"Occasional calling"	14
18.13	"Calling a little"	14
18.25	"Fairly frequent calling"	173
18.27	"Frequent calls"	207
18.30	"Calling more obvious"	352
18.34	"Considerable continuous twitter"	534
18.36	"ditto"	638
18.45	"Still twittering"	800
18.47	"Twittering rather less"	803
18.50	"Still fairly continuous"	805
18.51	"Occasional calls"	805
18.52	"Quite quiet"	805

The calls uttered were of a softer, sweeter character than the usual flight call, but each was almost certainly a double note, as is the flight call. Individual calls were difficult to distinguish in the bird chorus and amid heavy Dublin traffic. However, on 16th March in Belfast, at another urban roost of this species, I was able to hear the birds at 15 feet range from a window at their level and was able to confirm the use of the softer double note; in addition, I heard occasional sung phrases, each of about eight or nine notes.

The precise function of this chorus is not clear. Armstrong (1963) says that the Dublin birds are "apparently attracting each other by their calls as well as their movements". Certainly the timing of the chorus is consistent with Armstrong's view in that the sound begins to subside once all the birds are in, but equally the cessation could be correlated with a particular light intensity. Wynne-Edwards in his highly stimulating book (1962), after quoting Moffat's (1931) description of the chorus, describes it as "a mass-demonstration, taking the form of a vocal chorus . . . presumed to have an epidieictic function". That is to say, the chorus provides an indication of the numbers of individuals present in a locality; if the numbers indicated are too high in relation to predicted food supplies, then an exodus of the excess population follows. Certainly the sudden and puzzling changes in the numbers of wagtails at some roosts could be explained by Wynne-Edwards' theory, for example the 1957 observations of Rappe (1960), the January drop in Dublin numbers in 1932 (Moffat 1932) and the curious fluctuations in Richmond Park, London, in the late autumn of 1937 (Colyer 1938).

Colyer is one of the very few other writers who make reference to vocal behaviour at the roost. "From the moment of arrival of the first Wagtail at the pond there were continuous calls of "*chizick*" and other chirpings from the trees or grass-banks, perhaps most of all when the whole flock was assembled in the roost." Keywood (1937) says "The wagtails kept up their musical call continuously"; Coward (1928) says "When gathering at the roost a few male birds often join in a short evensong, simple but melodious, a twittering chorus not unlike that of a swallow." Sterland's charming account, written nearly a century ago, is well worth quoting in full: "They arrive in pairs about an hour before dusk and perch on the bushes, continuously shifting their places and uttering rather clamorously a shrill 't-wee'. Often I have stood concealed and watched their proceedings and as I listened to their busy twitter I could fancy that they were each of them detailing their personal adventures during the day. As darkness drew on the gossip gradually ceased and one by one they dropped down amongst the furze bushes" (Sterland 1869).

At a roost in a Somerset greenhouse that I visited on 24th July 1965 there was no chorus and very little calling, though I did hear a cock bird in very good song. The group vocalisation may only occur seasonally, in particular weather, or be influenced by some other variable.

Rappe's detailed account (1960) makes no mention of voice at all in roosting White Wagtails in Belgium, but the account by Greaves (1941) of a winter roost of this race in Egyptian fields of sugar-cane is worth quoting: "The birds circle round and up and down, constantly changing direction and calling. It was not clear whether those already down called, but it seemed obvious that the leaders of the flocks were trying to find out the places where others were already roosting and when the leaders went down the others followed at once or after making another short flight."

A number of other communal roosters indulge in an evening chorus, for example the House Sparrow (*Passer domesticus*) (Summers-Smith 1963).

When a flying predator appears, the chorus changes character (see under "Predators" below).

When I arrived at the Dublin roost site in near-darkness at 05.25 on the morning of 25th March to witness the morning departure, there were occasional calls from settled birds. As odd singles flew to nearby buildings and called, a bird in the tree would call, apparently in response. By 05.50, when small parties had begun to disperse, the calling in the tree intensified a little and in one 60-second period I counted 18 soft "tisups". Something like this rate of calling was kept up until the number left in the tree was considerably reduced. At no point did the volume and frequency of calling become continuous, or in any significant way approach the distinctive vocal display of the evening congregation. As each party took off from the tree, however, its members called, creating a little clamour and usefully attracting the observer's attention.

PREDATORS

A. G. Mason told me that the Dublin roost had been known to attract a Sparrowhawk (*Accipiter nisus*), and John Smullen, an inspector with the Irish transport organisation, C.I.E., told me that in eighteen years he had frequently seen a hawk of this species, particularly in the winter months. The hawk would appear during the period of assembly, sometimes causing the wagtails to take to the nearest buildings, where a capture would sometimes be made. James Fisher told Smith (1950, p. 57) that in January 1947 a Sparrowhawk was preying on birds in the Dublin flock. I myself saw a male Sparrowhawk three times on the evening of 25th March, at 17.37, 17.53 and 18.02 G.M.T. The appearance of the enemy caused an intensification and harshening of the twittering chorus and once when the bird flew close to the tree it drove five Pied Wagtails out, but I did not see it capture a bird.

Mr. Smullen saw a "grey owl" in a roosting tree some ten or twelve years before, the only owl he had ever observed in the vicinity of the roost. As it perched in the tree the wagtails flew out. A photograph of the bird was taken by the Irish Press Ltd. and published in a Dublin newspaper. I have not seen this photograph, but apparently it was a Barn Owl (*Tyto alba*). Mr. Walter Mooney, who for sixteen years has been the attendant in the underground establishment near the southernmost tree, tells me he has seen at least four owls over the years, "brown" in colour—possibly Long-eared Owls (*Asio otis*), since the Tawny Owl (*Strix aluco*) is not found in the island.

URBAN ROOSTING

The selection of an urban habitat for sleeping by birds which spend the day outside that habitat is one interesting example of avian response to increasing urbanisation. It is perhaps best exemplified by the Starling (*Sturnus vulgaris*), whose town dormitories I have seen in London, Birmingham and Belfast, in Philadelphia, U.S.A., and which are also known from continental Europe, *e.g.* Amsterdam (Ko Zweeres, pers. comm.) and Rome (Gottard Reichelt, pers. comm.). Another species known similarly to behave is the Jackdaw (*Corvus monedula*). Steinfatt (quoted by Goethe 1934) saw a roost in Sofia which was brightly illuminated by the lights of the boulevards, and Nils Linnman (pers. comm., November 1965) told me that in Stockholm and other Swedish towns Jackdaw roosts in the trees of well-lit squares are regarded as unexceptional by Swedish ornithologists. K. E. L. Simmons (pers. comm.) saw a town roost in a single tree of Cattle Egrets (*Ardeola ibis*) in Cairo in 1950. An urban roost of Goldfinches (*Carduelis carduelis*) has recently been reported from London (Ruttledge 1965). In a review of a book Nicholson (1964) makes a tantalisingly brief reference to an observation he made in Colombia: the Common Nighthawk (*Chordeiles minor*) ". . . roosts in numbers in the town square at Villavicencio".

Other wagtail species which at least occasionally roost in towns are the Grey Wagtail (*Motacilla cinerea*) in the Hague (Koch 1934), and in Beirut (Cawkell 1947); and the Cape Wagtail (*Motacilla capensis*) in several towns in South Africa (Winterbottom 1964 and Skead 1954).

I am at present working on the urban roosts of *Motacilla alba* (Boswall, in preparation) and will therefore confine myself here to a list of the main towns known from the literature to have been occupied at least once by a congregation of either *M. a. yarrelli or M. a. alba.* They are as follows. In Britain: Bristol, Cambridge, Carlisle, Cheltenham, Edinburgh, Leicester, and London (several suburbs). In Germany: Frankfurt, Hanover and Osnabruck. In Italy: Milan, Perugia and Rome. In Egypt: Cairo. In Tunisia: Sbeitla.

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Chris Mylne and Anne Morris (née Deane) helped with the observations. The Secretary of the Bank of Ireland gave permission for me temporarily to keep Nelson company at the top of his pillar. Charlie Winn, Eric Philp, Stanley Cramp and David Cabot allowed me to include observations of theirs in the paper. Peter Davis patiently answered queries about the migration of the race. An earlier draft of the paper was usefully commented on by Stanley Cramp and K. E. L. Simmons. I am grateful to all these people.

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The six hundred and thirty-seventh meeting of the Club was held jointly with the British Ornithologists' Union at the British Museum (Natural History) on the 18th October, 1966.

On the breeding of Baillon's Crake *Porzana pusilla (Pallas)* in Africa and Madagascar

by C. W. Benson and Charles R. S. Pitman

Received 6th May, 1966

Our attention has been drawn to a collection of eggs in the British Museum by C. Mason in southern Nyasaland (now Malawi) in 1916–17. An item of special interest is a C/3 fresh collected on Lake Chilwa on 11th June, 1917, from a "small nest of grass on water 3 feet deep". There is no reasonable doubt but that this clutch is referable to *Porzana pusilla*. In general colour and pattern the eggs closely resemble others of this species in the British Museum, consisting of over 20 European-taken clutches, an oviduct egg from Addis Ababa, Abyssinia (Guichard, *Bull. Brit. Orn. Cl.*, 68, 1948: 104), and various other eggs from Madagascar.

The Lake Chilwa eggs are pale olive, slightly glossed, thickly and finely marked all over light brown, size 29.0 x 20.2, 29.9 x 21.3, 27.6 x 21.5 mm. The Abyssinian egg is buff, smooth, dull surfaced, somewhat pointed, finely marked all over dull brown on underlying lilac, more thickly at larger end, 29.3 x 20.0 mm. The Madagascar eggs are as follows:—

Six collected by the Rev. W. Dean Cowan, in the Betsileo District, south-eastern Madagascar, apparently from four different clutches. One of two single eggs is pale buff, the others buff, all six marked all over dull or light brown on underlying lilac. The two singles are too disintegrated to be measurable, but the other two pairs measure respectively 27.0 x 22.7, 27.2 x 21.5; 29.8 x 21.3, 29.0 x 20.8 mm.

Six others from Betsileo, no collector's name, though presumably also collected by Cowan, from Captain G. E. Shelley and the Jaurach/Crowley Bequest (B. M. registered numbers 1901. 11. 20. 422–427), as follows:— 422, buff, slightly glossed, marked all over light brown on underlying lilac, 28.3 x 20.3 mm.; 424/5, pale buffy-olive, smooth, dull surfaced, finely marked all over pale brown on underlying dull lilac, 29.5 x 20.6, 30.0 x 20.3 mm.; 423, 426/7, possibly all from one clutch, brownish-buff, smooth, dull surfaced, thickly and finely marked all over dull brown on underlying dull lilac, 30.7 x 21.0, 29.7 x 20.5, 27.2 x 20.5 mm.

One collected by the Rev. James Wills, in eastern Madagascar, from a C/4, colour and markings as in Abyssinian egg, heavily incubated and too disintegrated to be measurable.

Unfortunately not one of the Madagascar eggs is dated, nor do the reports on Cowan's and Wills's activities referred to by Rand (1936: 154–155) throw any light on this. Milne-Edwards and Grandidier (15, 1881: pl. 306), under the name *Ortygometra pygmaea* Naumann, figure an egg which agrees closely in colour with the eggs examined by us, though neither do they (12, 1879–85: 579) give any date (they give a measurement, however, of 30 x 21 mm.). But presumably, as seems to be the case for *P. pusilla* in Africa, breeding is mainly during the rains, in Madagascar from November to April (Rand, 1936: 205). In south-central Africa most Rallidae are rains breeders (Benson, *Proc. 13th Internat. Orn. Congr.*, 1963: 625, and Benson *et al.*, 1964). Considering the incidence of the rains in the Ethiopian region as a whole, as outlined by Moreau (*Ibis*, 1950: 226), the Abyssinian record, which is for July, falls within that season, as does another from Malawi and more dubious ones from Northern Rhodesia (now Zambia) (Benson, 1964). Gurney (*Andersson's Bds. Damaraland*, 1872), under the name *O. pygmaea*, describes eggs, unfortunately without giving a date, but Roberts (*Ann. Trans. Mus.*, 11(7), 1926: 229) describes a clutch from Potchefstroom, Transvaal, taken in December, Benson *et al.* (1964) give a record of egg-laying in Rhodesia in March, Clancey (*Bds. Natal and Zululand*, 1964) states that breeding is from about November, and Smithers (*Check list Bds. Bechuanaland*, 1964) records a specimen in breeding condition at Lake Ngami in January. The Lake Chilwa record is after the normal conclusion of the rains, but conditions could still have been relatively moist in early June, with flood-waters not yet receded.

The following unpublished data, on the files of the Percy FitzPatrick Institute, Cape Town, have been provided by Professor J. M. Winterbottom:— Somerset West (near Cape Town), C/5, mid-September, 1955, and C/4, 10th November, 1963; Ladybrand, Orange Free State, two C/2, 29th January, 1934. The Somerset West records are from the winter rains area peculiar to the south-western Cape Province, the first falling within the rains, the second in the early dry season, so perhaps analogous to that from Lake Chilwa, southern Malawi. The Ladybrand records fall within the rains. Winterbottom (*Proc. 13th Internat. Orn. Congr.*, 1963: 643) records a peak in the breeding of water birds generally in the south-western Cape in the latter part of the rains, in September, while by November there is a marked fall-off.

Benson (1964) shows a tendency towards a longer bill in Madagascar specimens of *P. p. intermedia* (Hermann) (of which he regards *P. p. obscura* Neumann as a synonym) than in African. Four from that island in the University Museum of Zoology, Cambridge, not included in his measurements, all have culmen from base 19.0 mm., wing in one 84 mm., the other three not measurable.

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The southern forms of *Mirafra africanoides* Smith

by C. M. N. White

Received 28th June, 1966

In 1961 in Revised Check List of African Broadbills, Pittas, Larks, etc., at pages 21–24, I dealt with the forms of *Mirafra africanoides* Smith. In 1965 in *L'Oiseau*, 35, No. Spécial: 163–174 Professor Winterbottom has reviewed the southern subspecies of the species, and in 1966 Mr. P. A. Clancey in *Arnoldia*, 2, no. 20, 1–8 has provided yet another review of the southern subspecies. These two most recent reviews are divergent in a number of respects although both are evidently based upon much the same material in South African and Rhodesian museums. Of the two Clancey's conclusions are much nearer to my own. It is obviously most unsatisfactory to have several diverse views about the treatment of geographical variation in this species and the present note seeks to show that Clancey's and my own views can be reconciled. The points involved are as follows:—

i. The application of the name *africanoides* Smith. In *Bull. B.O.C.* 1960, 80: 10–11 I gave reasons for accepting Litakun, near Kuruman as the restricted type locality. Clancey (*op. cit.* 102–103) considered that Macdonald's later restriction to Colesberg should be accepted as more in keeping with the facts. It had been generally considered that birds from Colesburg were darker and more heavily streaked than those from Kuruman but Winterbottom now reports that some birds from Kuruman are of the dark type, and others of the lighter type. This may be due to the unstable population or may be due to nomadism. At any rate it shows that even if Kuruman were accepted the name *africanoides* might be based on light or dark birds. In view of this and the fact that most recent writers have used *africanoides* for the darker birds, I propose that *africanoides* should be restricted to the dark birds. Since Kuruman is an unsatisfactory restriction of type locality in view of the instability of the population there, I would now avoid uncertainty by accepting Colesburg as the type locality. Thus *africanoides* replaces *austin-robertsi* White in my Check List. I do not consider the slight size difference mentioned by

Winterbottom sufficient to justify the retention of the latter name if *africanoides* is used for the dark birds.

ii. The application of the name *harei* Roberts. In my Check List I used this for birds from Windhoek to the Kaokoveld. Macdonald, 1957, Contribution to the Ornithology of Western South Africa, and Clancey have used it for the birds to which I applied *africanoides*, *i.e.* the population from south of Windhoek to Gordonia and Kuruman. Actually the difference between birds from south and central South West Africa and those from the north-west is very slight, and Winterbottom and Clancey do not agree in their assigning of material from the Okahandja, Outjo and adjacent areas just north of Windhoek. The type locality of *harei* is in fact situated in an area of transition between two rather similar forms. *Harei* as a population is presumably an intergrade about its type locality, and if most writers prefer to use it for the southern birds and *omaruru* for those from further north, I have no difficulty in following them.

iii. The status of *rubidior* White. Clancey, who did not see the original and only specimens doubts that this is a distinct form and suggests that it is probably founded on wandering birds of a darker form from further south. Winterbottom did examine the original series and confirmed its characters. I suspect that Clancey will prove correct but only further collecting at the type locality can settle the question.

The result of the above shifts in the application of three names reconciles the views of Clancey and myself on the treatment of infraspecific variation in the species.

The eggs of the Giant Cowbird

by F. HAVERSCHMIDT

Received 24th April, 1966

Friedmann (1963) devotes a chapter to the Giant Cowbird *Scaphidura oryzivora* (Gmelin) and makes the somewhat startling statement that although this bird is intermediate in size between two of its frequent victims, *Psarocolius decumanus* (Pallas) and *Cacicus cela* (Linnaeus), it lays an egg considerably smaller than either of them.

He further states that *Scaphidura* eggs average 28.6 x 19.2, those of *P. decumanus* 33.8 x 24.1 and those of *C. cela* 32.5 x 24.5 mm. The source of these data is not mentioned. However, neither the data in the literature nor my own records assembled in Surinam corroborate this statement.

Scaphidura is intermediate in size between its two hosts. Three female *Scaphidura* collected by me in Surinam weighed 120–140 grms. (mean 129 grms.), 8 female *P. decumanus* 148–167 grms. (mean 157 grms.) and 10 female *C. cela* 62–72 grms. (mean 65 grms.). In all three species the male is considerably larger than the female.

In the literature the following records are available.

The Penard brothers (1910) devote a long section in their book to these three birds and the parasitism of *Scaphidura*.

They state that the eggs of *Scaphidura* found in the nests of *P. decumanus* are of quite a different type than those laid in the nests of *C. cela* which, if true, would be a most interesting fact.

According to them the eggs of the parasite in the nests of *P. decumanus* are white with a few black spots and the eggs laid in the nests of *C. cela* bluish with some black spots and hair-lines.

Hellebrekers (1942, 1945) revised the large egg collection assembled for the Penard brothers in Surinam which is now preserved in the Leiden Museum.

He describes the eggs of *Scaphidura* in nests of *P. decumanus* as white sparingly marked with small and rather large blotches of a blackish colour, rarely dark brown. Often some hair-lines of the same colour and few purplish undermarkings chiefly at the large end.

Seventeen eggs average 35.7 x 24.3 mm. Minimum 32.5 x 24.3 and 33.7 x 22.4 mm. Maximum 40.1 x 24.2 and 37.6 x 25.6 mm. The *Scaphidura* eggs in nests of *C. cela* are, according to him, light bluish or bluish-green, sparingly marked with small or rather large blotches of blackish colour, rarely brown, often some hair-lines of the same colour few purplish undermarkings chiefly at the large end.

Thirty-four *Scaphidura* eggs in nests of *C. cela* average 34. x 25.5 mm. Minimum 31.5 x 24.3 and 34.4 x 23.8 mm. Maximum 35.5 x 27.3 and 35.1 x 29 mm.

The eggs of *P. decumanus* in this collection are described as white with some purplish tinge, with reddish and black spots and hair-lines. In some cases these only a darker shade of the reddish ground colour; in other cases more clearly and boldly marked chiefly at the large end.

Forty-two *P. decumanus* eggs average 36 x 24.5 mm. Minimum 31.5 x 24.6 and 37.4 x 22.4 mm. Maximum 41.1 x 25.8 and 39.5 x 26.6 mm.

The eggs of *C. cela* are described as glossy white with a few black spots.

Fifty *C. cela* eggs average 28.4 x 19.08 mm. Minimum 24.2 x 18.2 and 27.5 x 17.3 mm. Maximum 32.2 x 18.5 and 31.6 x 20.6 mm.

Belcher and Smooker (1937) make some confusing statements about eggs of *Scaphidura* and *P. decumanus* collected in Trinidad. As to the eggs of *Scaphidura* they "incline to the view" that they run through the same varieties of ground colour and markings as *Psarocolius* except that *Scaphidura* lays a white variety which does not appear with *Psarocolius*.

Ten eggs "attributed" to Scaphidura by them average 33.5 x 23.7 mm. They further distinguish two types of eggs of *P. decumanus*; those with bluish ground which are spotted and blotched with black and dark brown and those with "other ground colour" which are marked with zigzag hieroglyphs.

In my opinion the bluish eggs are of *Scaphidura* and the type with zigzag hieroglyphs those of the host.

The fact that Belcher and Smooker found bluish eggs with black spots in nests of *P. decumanus* (which I consider to be eggs of *Scaphidura*) is of particular interest through which the theory of the Penard brothers that bluish *Scaphidura* eggs are confined to the host *C. cela* collapses.

Skutch (1954) describes an egg identified by Crandall as spotless white, measuring 36.1 x 26 mm. and an egg supposedly laid by *Scaphidura* from a nest of *Gymnostinops montezuma* as very pale blue with a few scattered scratches of brown, measuring 36.5 x 25.4 mm.

Schäfer (1957) describes an egg attributed to *Scaphidura* as spotless white measuring 34.2 x 22 mm. weight 9 grms.

So far the data from the literature. My own records assembled in Surinam are limited but corroborate the data in the literature.

On March 2, 1950 I examined a colony of *Cacicus cela* of about 30 nests which were not parasitized by *Scaphidura*. The nests contained eggs in all stages of incubation and nestlings of different sizes. The clutch consisted of 1 or 2 eggs (only 10 clutches of 2 eggs) and in no nest were more than 2 nestlings found. The eggs were glossy white with a few blackish spots.

Twenty-two averaged 27.9 x 18.9 mm. The largest measured 30.4 x 19.5 and 28.1 x 20.2 mm. The smallest 25.5 x 18.7 and 27.2 x 17.7 mm. The weight of 6 unblown and fresh eggs averaged 5.43 grms. (extremes 5.9 and 4.72 grms).

On February 20, 1958 I found in a nest of *C. cela* a single egg of *Scaphidura*. It had a bluish ground colour with a few black spots and hair-lines, measuring 33.3 x 24.5 mm. weight 8 grms. I had observed females of *Scaphidura* in this colony from December 27, 1957 onwards. This particular egg was therefore totally different from the eggs of the host not only in colour but also in measurements and it could be distinguished immediately.

As to *Psarocolius decumanus* the situation is more difficult because the eggs of the host and the parasite overlap in size. However, I found in the nests of *P. decumanus* two very different types of eggs. One with a white ground colour very thickly covered with purplish spots and many zigzag lines of the same colour and the other one white with a few small black spots resembling as Hellebrekers (*loc. cit.*) justly remarks, large eggs of the Oriole (*Oriolus oriolus*.)

Two eggs of the white type with a few black spots, slightly incubated and found together in the same nest on January 3, 1964 measured 33.9 x 23.5 and 33.6 x 24.2 mm., both weighing 9 grms. Three fresh eggs of the same white type with a few black spots, found as singles in three different nests on the same date were slightly larger: 35.9 x 23; 36.4 x 24 (11 grms.) and 35 x 24.8 mm. (10.5 grms).

These five are wholly different from three eggs found as singles in three different nests on December 30, 1963. These last eggs have a hardly visible white ground colour being thickly covered with purplish spots and zigzag lines. They measure 35 x 23.7; (10.5 grms); 36.9 x 24 (11 grms) and 35.6 x 23.7 mm.

I attribute the white eggs with black spots to *Scaphidura* and the eggs with purplish zigzag lines to *P. decumanus* and I feel strengthened in this opinion because the eggs of *P. viridis* (a near relative of *P. decumanus*) in the Penard collection are all of the same type (whitish thickly covered with purplish zigzag lines).

Even if we dismiss the eggs attributed to *Scaphidura* in the nests of *P. decumanus* altogether because of their overlapping size (though very different in colour and markings) then the fact remains that the eggs of the parasite in the nests of *C. cela* can be distinguished at once by their larger size.

Therefore the statement by Friedmann about the small size of the parasite's egg is incorrect, as his measurements of *Scaphidura* eggs are too small and those of *Cacicus cela* eggs too large. Apart from the eggs many more if not most other phases of the brood parasitism of *Scaphidura* remain to be solved.

It seems proven that sometimes more than one egg of the parasite is found in a host's nest.

The statement by the Penard brothers that the eggs of *P. decumanus* are broken or removed by the parasite is not correct. Schäfer (1957) found a nest of *P. decumanus* with one egg of the host and one of the parasite and Goeldi (1894)—who seems to be the first to prove that *Scaphidura* is a brood parasite—found a nestling of the host and a nestling of the parasite together in the nest of *P. decumanus*.

Schäfer (*loc. cit.*) made on August 1, 1954 an even more interesting observation when he saw "without any doubt" ("sans erreur possible") a nestling *Scaphidura* just out of a *P. decumanus* nest being fed by a female *Scaphidura*!

It would be most desirable to keep a colony of *P. decumanus* and *C. cela* under constant observation during a whole breeding season. The trouble is that the nests of *P. decumanus* are mostly inaccessible and that they cannot be inspected without destroying them as they are hanging at the end of side branches of trees and often at a great height.

To inspect the contents of the nests regularly, the building of a movable tower to the same height as the nests would be necessary.

C. cela though often building thick clumps of nests in low bushes and trees often has the troublesome habit of nesting near and around wasp nests, sometimes of large size, which keeps even the most persistent observer at a safe distance.

SUMMARY

The statement by Friedmann (1963) that the Giant Cowbird (*Scaphidura oryzivora*) though intermediate in size between two of its frequent victims *Psarocolius decumanus* and *Cacicus cela* lays an egg which is considerably smaller than either of them is incorrect, as his measurements of *Scaphidura* eggs are too small and those of *Cacicus cela* eggs too large. The eggs of the parasite overlap in size with those of *P. decumanus* apart from differing in markings, but are considerably larger than those of *C. cela*.

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Further systematic notes on Mexican birds

by Allan R. Phillips

(*continued from page 131*)

Euphonia gouldi loetscheri subsp. nov.

Description: Largest race known; ♂ averages slightly paler, duller cinnamon on belly than *E. g. gouldi* P. Sclater, 1857: "Guatemala".

Distribution: Southern Veracruz north and north-west of the Isthmus of Tehuantepec.

Types: ♂♂♀, all in first basic plumage; Dos Amates, north-east of Catemaco, Veracruz, 14th November, 1962; 5th January and 14th August, 1965; Abraham Ramírez V.

Measurements of types: Wing 61, 62, 61; tail 35, 35, 32.5 mm.

Material examined: 1 ♂ 6 imm. ♂ 3 imm. ♀.

Remarks: (AMNH, CM, F, GMS, KANU, RTM, WF). This race may appropriately be named for Dr. Frederick William Loetscher, Jr., whose unpublished list has been the foundation of so much recent work on Veracruz birds. The difference in bill size pointed out by Wetmore (1943) is less susceptible of accurate measurement than are the wing and tail. As the Table shows, the small *praetermissa* (Peters) is not limited, as

TABLE

Measurements of *Euphonia gouldi* (excluding juveniles and dubiously labelled specimens)

	♂♂		♀♀	
Populations	(*no.*) *wing*	(*no.*) *tail*	(*no.*) *wing*	(*no.*) tail
Dos Amates, Veracruz	(7) 60.3–62.2	(7) 34–35	(3) 58.6–61	(3) 32–32.5
Eastern Veracruz and Isthmus of Tehuantepec	(8) 55.8–58.8	(8) 30.5–33.1 [+]	(7) 54.5–56.7	(7) 28–31.2
Solosuchiapa, northern Chiapas	(5) 56.5–59.5	(5) 30.8–32.8	(3) 55.9, 56.5, 58.3	(3) 29.3, 29.8, 32.7
Laguna Ocotal and easternmost Chiapas, and Guatemala (unworn)	(12) 54.6–59	(12) 28.3–31.7	(5) 54.5–56.6	(5) 28–30.3
British Honduras (worn)		(1) 30.2	(2) 54.4, 57.7	(2) 27, 28.7
Nicaragua[1]	(6) 52.5–57.3	(6) 26–30.7	(2) 52.5, 53	(2) 25 [+] 25.7
Costa Rica	(20) 51.7–56.4	(17) 24–28.5	(6) 52–53.4	(6) 23.8–26
Panama[2]	(2) 51.4, 53.5	(3) 26–26.4 (±)	(1) 52.3	(3) 24.3–26

[1] Due to pressure of time, not all of the Nicaragua ♂♂ (AMNH) were measured; but care was taken to measure all the largest ♂♂.

[2] Most of the 3 ♂ 4 ♀ seen from Panama are badly worn; their wing measurements are here excluded. Possibly careless measuring of such birds accounts for current concepts of the limited range of *praetermissa*. The smallest Costa Rican birds listed here are *not* from adjacent, south-eastern Costa Rica, but from San Carlos, Río San Rafael (♀, tail 23.8, RTM) and Guanacaste (♂, wing 51.7, GMS).

commonly stated, to Panamá and southern Costa Rica, but extends over all of Costa Rica and, in less typical form, to the Nicaragua–Honduras border (Río Coco = Wanks River). As to colour, the material seen from extremes of the range (British Honduras and the Pacific slope of Costa Rica) is insufficient to determine the constancy of the observable variations.

Euphonia hirundinacea Bonaparte, 1838.

I use this long-familiar name, since the name *Tanagra* Linné, 1764, overlooked for many years, and all of its unfortunate and confusing consequences are in process of repudiation by most zoologists (including the International Commission). A recent substitute name is *Tanagra lauta* Bangs and Penard, 1919. The type (of both, of course) is a young male taken by Col. Velásquez on the Pacific slope of Guatemala. Griscom (1930 : 5–6; 1932a : 408) argued that Velásquez must have purchased birds from other parts of Guatemala because his collection included *Hylophilus decurtatus*, a species "restricted to the Caribbean rain forest". In actual fact, however, this vireo occurs widely on the Pacific slope of Guatemala (*fide* Hugh C. Land, *in litt.*), as well as elsewhere on the Pacific slope: foot of Volcán Tacaná, Chiapas, personally collected; near Mapastepec, Chiapas (my collection); El Salvador. Griscom's statement is thus disproved.

Though it has long been known that *E. h. gnatho* (Cabanis), 1860: Costa Rica, differs from more northern Caribbean females in more extensively yellowish underparts, nobody seems to have noticed that similar tendencies extend all along the Pacific slope to Chiapas. Virtually all Pacific females have the throat and chest largely or wholly yellow, not broadly and continuously pale grey medially as in Caribbean females; likewise the latter's grey collar (behind the auriculars) is obsolete in most or all Pacific females. True, 3 ♀ 1 ♂ juv. from 8–24 km. south of Cuilapa, Santa Rosa, south-eastern Guatemala (HCL) do seem intermediate; but no Pacific female examined agrees with the well-known Caribbean female described by Ridgway (1902), who probably never saw one from the Pacific slope. Caribbean birds also vary among themselves, in colour tones (not pattern); three races may be distinguished (CM, GMS, HCL, LSU, MICH, RTM, US, WF, YU):

Euphonia hirundinacea caribbaea subsp. nov.

Description: The widespread race commonly described as the nominate race (but see above). Back in unworn ♀ not much yellower than Roman Green or Yellowish Olive. ♂ ad. deeper, more tawny yellow on forehead and underparts than ♂♂ from farther north-west.

Distribution: Caribbean slope (excluding Yucatán Peninsula) from southern Veracruz (Catemaco region, and apparently Fortín de las Flores, near Orizaba) to at least Honduras.

Types: Original nos. 6613 and 6618; ♀, imm. ♀; 38 km. north of Matías Romero, Oaxaca (= Monte Bello, north of Palomares), 22nd January, 1963; prepared by Laura Guzmán G. (6618 collected by Robert W. Dickerman). Fat. Skull of 6613 ossified, 6618 with "windows".

Measurements of types: Length ——, 120; extent 210, 211; wing 61.2, 57.8; tail 36, 33.3 mm. Weight 17, 16.7 grammes.

Material examined: Large series, chiefly from Catemaco area, Veracruz.

Remarks: ♂♂ ads. from Veracruz usually have the wing 61 mm. or more, while Honduras ♂♂ rarely reach that figure; but some overlap occurs.

Euphonia hirundinacea russelli subsp. nov.

Description: Very similar to Honduras specimens of *caribbaea*, *supra*; but differs from this and *hirundinacea* in richer, more ochraceous (less pale or greenish) yellow sides and flanks of ♀, strongly approaching Lemon Yellow or Strontian Yellow (♀ *caribbaea* are not much more ochre-yellow than Pyrite Yellow, being at most half-way towards Lemon Chrome). ♀♀ also have a definitely yellowish chin, a bright yellow crissum, and usually (in adults) a definite large white patch (small or absent in 90 per cent of ♀ *caribbaea*) on the inner web of the outer rectrix. Dorsally they are darker, more bluish-green, with a bluer occiput producing a contrast (between the eyes) with the forehead, supraloral, and supraocular areas; back darker than Yellowish Olive, often approaching Krönberg's Green.

♂ ad. averages deeper, more reddish-purple in the reflections on the back than *caribbaea*.

Distribution: Eastern part (at least) of the Yucatán Peninsula.

Type: Original no. 8516 ♀; 2 km. NE. of Felipe Carrillo Puerto, Quintana Roo, México, 30th January, 1965. Prepared by Laura Guzmán G. Ovary well developed but immature in appearance; skull ossified; moderately fat.

Measurement of type: Length 117, extent 205, wing 58, tail 33 mm. Weight 12.7 grammes.

Material examined: Small series of both ♀♀ and ♂♂ in definitive plumage (no green-backed first basic plumaged ♂♂) from nearly the whole of Quintana Roo and parts of British Honduras.

Remarks: This race may appropriately be dedicated to Dr. Stephen M. Russell, who has given us such a helpful account of the birds of British Honduras.

Euphonia hirundinacea suttoni subsp. nov.

Description: Very similar to *E. h. caribbaea*, *supra:* but in unworn ♀ and green-backed ♂ (first basic plumage, part) yellowest, palest green on back and rump, as well as paler, duller yellow below; back of ♀ near dark Yellowish Citrine or yellowish Serpentine Green. Reflections from black back of ad. ♂ paler bluish.

Distribution: Northern end of the range of the species in southern Tamaulipas, eastern San Luis Potosí, north-eastern Puebla (east of Huauchinango), and northern Veracruz south to Tuxpan and Tlapacoyan (intergrading, apparently, in the Huatusco area).

Types: In collection of George Miksch Sutton ♀♀; Río Sabinas near Gómez Farías, south-western Tamaulipas, 1st March (1938, 1949); collected by G. M. Sutton (GMS 8093) and W. B. Heed (PSM 46).

Measurements of types: Wing 58.5, 61; tail 34, 35 mm.

Material examined: Small but adequate series of all three plumages.

Remarks: I take pleasure in dedicating this handsome bird to Dr. George Miksch Sutton, whose boundless enthusiasm and energy sparked the recent renewal of interest in the avifauna of north-eastern México.

Occasional winter birds from north-east of Catemaco, Veracruz, are near *suttoni*. I do not know whether this indicates some migration or simply intergradation.

Piranga bidentata alvarezi subsp. nov.

Description: (AMNH, KANU, LA, LDY, MIN, RTM, WF) ♂ ad. closest to *P. b. sanguinolenta* Lafresnaye, 1839: México = probably Veracruz, but still deeper red on head, breast and belly; anterior wing-bar also richer, extensively pink (or orangeish). ♀ imm. very dull, less green or yellow than more northern ♀♀ seen (which however may be adults).

Distribution: The type region, and possibly central and northern Chiapas.

Types: Original nos., 8062, 8073, and 8192 ad. ♂♂; km. 183 (*cf. Micrastur*), 4 (2) and 12th December, 1964; Juan Nava S. (8073 prepared by Santos Farfán B.; 8192 collected by W. J. Schaldach, Jr.).

Measurements of types: Length 216, 215±, 206; extent 312, 306, 305; wing 98, 96.1, 100.6; tail 81, 80.5, 83.4 mm.

Material examined: 5 ad. ♂ (but 1=migrant?) 2 imm. ♂ 2 imm. ♀ from type locality and near San Gabriel Mixtepec; also series from northern Chiapas and 2 ♂, south-easternmost Oaxaca, most of which were not directly compared to the types.

Remarks: I name this lovely tanager for Miguel Alvarez del Toro, in recognition of the value of his work on the animals of Chiapas and their conservation, and in appreciation of his help during my own visits there. I have seen no material of this species from central or northern Oaxaca.

Piranga flava intensa subsp. nov.

Description: (LDY, RTM) Near *P. f. hepatica* Swainson, 1827: Real del Monte, Hidalgo, and *P. f. dextra* Bangs, 1907: Jalapa, Veracruz, and synonyms *oreophasma* Oberholser and *zimmeri* van Rossem (see Sutton and Phillips, 1942); but deeper, richer below, especially the ♀; throat of ad. ♀ near Light Cadmium. Back deep and dull (grey) in ad. ♂ and imm. ♀, but edgings of primaries and tail, and upper tail-coverts, deep and rich.

Distribution: Mountains of south-western Oaxaca (no material recently seen from central or northern Oaxaca); possibly also parts of Chiapas, but the series is small and variable.

Types: Original nos. 7723, 7765, and 7776, ad. ♂ (2), imm. ♀; vicinity of San Miguel Suchixtepec (above Río Molino), municipio de Miahuatlán, Oaxaca, 12 and (2) 13th November, 1964; 7765 collected and prepared by Juan Nava S.; rest prepared by Santos Farfán B. (7776 collected by W. J. Schaldach, Jr.).

Measurements of types: Length 211 [+?], 208, 208; extent 329 [+?], 313 (—?), 308; wing 100.5, 99, 93.5; tail 80.3, 80, 76.7 mm.

Material examined: 4 ♂ ad. 2 ♀ ad. 1 ♂ imm. 1 ♀ imm., from type locality north nearly to Miahuatlán and west to above (south of) Juchatengo.

Piranga rubra ochracea subsp. nov.

Description: A large, big-billed race like *P. r. cooperi* Ridgway, 1869: Los Pinos, New Mexico, but first basic (winter) plumage darker and duller, with very little yellow. Breast, rump, and especially flanks suffused with greyish Ochraceous-Buff. Back and rump also dull (grey-tinged) and dark, though paler than all but the palest *P. r. rubra* (Linné), 1758: South

Carolina (for example LSU 4286) and duller, less green (or brown). Wing-coverts and top and sides of head more greyish-brown (less olive-green). Edgings of rectrices average duller (greyer). Ad. ♀♀ show similar trends, but are less constant unless some October ♀♀ from the type valley are actually migrant *cooperi.* Ad. ♂♂ in *fresh* fall plumage are slightly purer (more purplish, less orangeish) red than *cooperi*; ventrally they are Begonia Rose x Spectrum Red (not Rose Dorée x Scarlet-Red); they are also a bit darker above, at least on crown and rump; but these differences are slight, and ad. ♂♂ of these two races are probably indistinguishable after November.

Distribution: Known to breed only in the central part of the Big Sandy Valley, Mohave County, Arizona (type locality south to at least Wikieup). Winters in western México (Sinaloa to Colima).

Types: Original nos. 2175 and 2178-79 ♀♂♀ (all imm.); Trout Creek just above its mouth, near Cane Springs, lat. 34° 57′ N. long. 113° 37′ W., western Arizona, 20th August, 1950. Little fat.

Measurements of types: Length 205.5, 210, 215.5; wing 94.3, 97.9, 97.1; tail 75, 80.5, 83.2; bill 15.5, 14.6, 14.7 mm. Weight 34.3, 33.5, 32.6 grammes.

Material examined: Also (from type valley) 5 ad. ♂, 5 ad. ♀, 3 imm.

Remarks: (AMNH, CAS, CU, LA, LDY, LSU, RTM, US, WF, University of Arizona, and private collections of Gale Monson, L. L. Hargrave, and L. M. Huey, and the R. Roy Johnson—James M. Simpson—James R. Werner Collection). Foxing is slight in this tanager, but individual and seasonal variations are impressive. Also, adult ♀♀ and, to a lesser degree, immature (first basic) ♂♂ are brighter, more yellowish than immature ♀♀; but there is either much mis-sexing or some overlap. Some *rubra* (*cf.* US 146586, Venezuela) strongly approach *cooperi.* ♀♀ possibly referable to *ochracea* as migrants or wanderers are from the nearby Colorado River, 2nd September, 1902 (Yuma, Arizona; Ariz. State Museum 1281) and 14th August, 1952 (southern tip of Nevada); definite migrant ♀♀ are from Tucson (16th April, 1938 and 31st July 1953—latter in the city where none nest).

Adult ♂♂ from the mouth of the Big Sandy River (Alamo crossing) and Burro Creek, south-eastern Mohave County, seem to be *cooperi* or intermediate; no ♀♀ or immatures are available from these points.

Chlorospingus ophthalmicus persimilis subsp. nov.

Description: (MIN, RTM) closely similar to *C. o. albifrons* Salvin and Godman, 1889: Omiltemi, Guerrero, but slightly darker brown on forehead, crown, nape, and sides of neck; back and rump deeper green, less yellowish; throat and especially malar area deeper, tawnier (less buffy); and chest slightly deeper, duller ochre.

Types: Original nos. 7817 and 7820–21 imm. ♂ (2), imm. ♀; Río Guajolote, 2,000 metres altitude, south-west of San Miguel Suchixtepec, municipio de Miahuatlán, southern Oaxaca, 15th November, 1964; collected by Juan Nava S. and (2) Benjamín Martínez Cruz; prepared by Santos Farfán B.

Measurements of types: Length 160, 161, 157; extent 223, 230, 216; wing 69, 70.3, 66; tail 63, ——, 60.5 mm.

Remarks: This is the tawniest-throated race of the species. Besides the types, I have a good series from km. 183; these are generally intermediate, but the head and neck are a trifle warmer, tawnier brown than either *persimilis* or *albifrons*. The only race previously reported from Oaxaca is the very different *ophthalmicus* (Du Bus).

Atlapetes brunnei-nucha parkesi subsp. nov.

Description: (CAS, CU, RTM) similar to *A. b. brunnei-nucha* (Lafresnaye), 1839: México [=Xalapa, Veracruz (Parkes, 1954)], but darker throughout; flanks less bright green; bend of wing deeper, more chrome yellow. (Tail of adults usually tinged with deep bay or auburn.)

Types: Moore Laboratory of Zoology nos. 33154 and 58, 33136, ♂♂ (testes large); La Gloria, 900 metres alt., 16 km. south-west of Presidio, southern Veracruz, 2nd, 3rd and 15th July, 1942. Collected by C. C. Lamb (original nos. 6132, 6151, and 6269).

Measurements of types: Wing 78.7, 81.8, 77.8 mm.; tail 77.2, 80.5, 79.5 mm.

Material examined: 6 ad. 1 imm. 3 juv. from type locality; 1 ad. from [above] Presidio.

Remarks: This race is dedicated to Dr. Kenneth C. Parkes, whose careful studies exploded the myth that this finch ranges from México to South America without geographic variation. The dark colour of the crown in birds from southern Veracruz had already been commented on; but Parkes considered one of the two specimens available to him to be a variant, and assigned the other to the nominate race. But the larger series now at hand (RTM) is consistently dark throughout, and adds another brown-tailed population to that of eastern Panamá (Parkes, 1954: 136).

Birds labelled as from extreme northern Chiapas (Tumbalá, RTM) are still darker below than *parkesi*, but are pale-crowned. The range of *brunnei-nucha* extends south at least to San Marcos de León, about 32 km. south of Xalapa (RTM).

Pipilo erythrophthalmus sympatricus subsp. nov.

Description: Closely similar to *P. e. torquatus* Du Bus, 1847: México [=a few km. north of Las Vigas, Veracruz; see Phillips, 1962a], =*P. e. ocai* (Lawrence), 1865: "Jalapa", Veracruz [=Las Vigas; see Sibley, 1950: 144]; but deeper grey on sides of chest, slightly more reddish-brown on nape and back, and especially darker on flanks and darker, more sooty-brown, on lower back and rump. White on mid-line of forehead more restricted.

Types: Original nos. 7818–19 ♀ [imm.?] ♀ ad.; Río Guajolote, 2,000 m. (see *Chlorospingus*), southern Oaxaca, 15th November, 1964; collected by Juan Nava S. and Benjamín Martínez Cruz; prepared by Santos Farfán B.

Measurements of types: Length 233, 240; extent 278(±), 287; wing 81.5, 84; tail 95.5 [+?], 101.5 mm.

Material examined: Also 7 from Río Molino, nearby.

Remarks: (CU, RTM) 36 fall specimens from Guerrero, plus information kindly furnished by C. J. O. Harrison of the British Museum (Natural History), show that *Pipilo torquatus brunnescens* van Rossem and *P. t.*

guerrerensis van Rossem, 1938, are synonyms based on wear and fading. In fact, the tendencies visible are in the opposite direction, thus according with Sibley's (1950:146–147) diagnoses; but overlap is wide. Van Rossem (1940) had previously conceded the doubtful separability of "*ocai*" and "*brunnescens*". Besides the above variations, the sexes differ: ♀♀ are darker on the flanks, and usually more rufous on the crissum, than ♂♂.

The name refers to the widespread overlap of the race with another which, in my opinion, is inseparable from *P. e. maculatus* Swainson. They react as full species here (where no towhees at all are mapped in any of Sibley's various papers). I find wide individual variation and, despite the geographic gaps between, cannot separate either *P. e. oaxacae* Sibley, 1950, or *P. maculatus chiapensis* van Rossem, 1938, from *maculatus*. (I have no specimens to assess *P. m. repetens* Griscom, 1930.)

Melozone kieneri obscurior subsp. nov.

Description: Like *M. k. rubricatum* (Cabanis), 1851: Real Arriba, western part of Edo. de México, in the restriction of the rusty crown, which does not descend behind the auriculars, and the slender bill; but crown deeper in hue or colour tone, near Argus Brown (in depth or darkness near Amber Brown, like darker specimens elsewhere); flanks and sides darker, the "shoulder" Dark Olive-Grey; femoral tufts deeper and richer than in other races (but equalled by specimens from Guerrero and south-western Puebla); bill longer, 16 mm. from base.

Type: Original no. 6747 ♂; near crossroads in juniper—lava association, 1740 metres alt., *ca.* lat. 16° 28′ N. long. 97° 2′ W., south-west of Sola de Vega, south-western Oaxaca, 22nd May, 1963. Singing; breeding condition; very little fat.

Measurements of type: (Rather worn): length 182, extent 254(±) mm., wing 80 mm., tail 72 mm. Weight 36.4 grammes.

Remarks: (LDY, MIN, RTM) Strenuous and repeated efforts secured only the one specimen, which is also notably black on the subocular area, slaty-backed, and grey (less olive-tinged) on the auriculars and rump; but foxing and wear may be involved here. The specimen closes somewhat the gap between the known ranges of the *kieneri* and *biarcuatum* groups; it does not approach the latter in characters, however.

Spizella passerina repetens subsp. nov.

Description: Surprisingly like the geographically remote *S. p. arizonae* Coues, 1872: Fort Whipple (=Prescott), Arizona; but darker, more brownish (less greyish) on sides of head (auriculars, superciliary stripe) than *arizonae* or than *S. p. atremaea* Moore, 1937: Los Frailes, (south-western) Chihuahua. Averages slightly darker than *arizonae* throughout the upperparts, and darker and browner on the chest, sides, and flanks. But distinctly paler, duller above, with less rusty colour and less contrast on the back, than *atremaea* or any other dark race. Feathers of back with only two colours distally: black near shaft and plain dull brown (or buffy brown) laterally.

Distribution: Mountains and arid interior highlands (Valley of Oaxaca) of most of Oaxaca (except the north, extreme north-west, and extreme south-east?); also in Guerrero, in less typical form.

Types: Original nos. 7757-8 ♀♀ imms.; Río Molino, southern Oaxaca, 13th November, 1964; prepared by Juan Nava S. and Santos Farfán B.

Measurements of types: Length (both) 143 [+?]; extent 216 [+?], 211 [+?]; wing 68.2, 66; tail 61, 57 [+? mostly missing] mm.

Material examined: Four from Guerrero; series from Oaxaca, northwest as far as Tamazulapan.

Remarks: (CAS, CM, LDY, LSU, MIN, RTM, WF). By this separation the winter limits of true *arizonae* become somewhat uncertain. Common in the Distrito Federal (R. W. Dickerman), it must surely reach Morelos; but the only report there (Miller *et al.*, "1957") seems to be based on RTM 44614, a pale sparrow marked "*arizonae* AHM" by Miller. This specimen I find to be actually *S. pallida*. I have not seen the old Guichicovi, Oaxaca, "*arizonae*", but the Tamazulapan bird is *repetens*. The latter race is surrounded on all sides (except of course the south) by darker, more rufous races, principally

Spizella passerina comparanda subsp. nov.

Description: Decidedly darker than the surrounding races, yet paler in all plumages (including the juvenal) than *S. p. mexicana* Nelson, 1899: San Cristóbal [=Ciudad Las Casas], Chiapas. Most like *S. p. passerina* (Bechstein), 1798: [eastern] Canada, but slightly larger with a heavier bill, more swollen at the base, and with browner (less prominent) wing-bars. Among nearby races closest to *atremaea*, but averages darker above (rump and edgings of tertials; crown to a lesser extent); back with more extensive chestnut, less buff; lesser wing-coverts and flanks slightly darker; and bill somewhat deeper.

Distribution: Mountains of trans-Volcanic belt from Nayarit east to Veracruz, north-eastern Puebla, and eastern San Luis Potosí (east of Ciudad del Maiz).

Types: Original No. 4608 and L. D. Yaeger 513 ♀♀ imms.; 5 km. south-east of La Galinda, = 39 km. south-east of Tepic, Nayarit, 24th October, 1957.

Measurements of types: Length 135, 140; extent 208, 210; wing 63, 67; tail 53, 58 mm.

Material examined: Series, mainly from Nayarit and Michoacán.

Remarks: This is *mexicana auct.*, but unfortunately Nelson chose a type from south-east of the Isthmus of Tehuantepec. Chiapas birds show well the darkness mentioned in Nelson's description; indeed in Ridgway's (1901) key they key out to *pinetorum*. Whether these two and *cicada* Dickey and van Rossem, 1928: San José del Sacare, Chalatenango, El Salvador, are really distinct I do not know.

Occasional variants of *comparanda* strongly approach other races. The amount of black on the forehead, one of Ridgway's characters, does not seem to me to be very valuable taxonomically.

Aimophila ruficeps extima subsp. nov.

Description: Most similar to *A. r. boucardi* (P. Sclater), 1867: "La Puebla", but still paler, duller, greyer brown above than types of that race. Crown Chestnut Brown somewhat approaching Russet (not Chestnut Brown x Mars Brown as in *boucardi*). Also a bit smaller. Much greyer above than the geographically closer *A. r. australis* (Nelson), 1897: "City of Oaxaca" [=Cerro San Felipe (?)], Oaxaca.

Distribution: Mountains of southern Oaxaca from the type locality west to at least the Miahuatlán area.

Type: Original no. 5708 ♀ imm.; 2 km. north-west of Portillo Nejapa (*ca.* lat. 16° 34′ N. long. 95°; 57′ W.), = 106 km. by road west-north-west of Tehuantepec, Oaxaca, 19th December, 1960. Little fat.

Measurements of type: Length 155; wing (completing moult of primaries) 57.7; tail 60.2 mm. Weight 19.5 (±) grammes.

Material examined: 1 ♀ 1 ♀ imm., type area; 1 ♀, near Totolapa; 3 ♂ 2 ♀, 13 km. south of Miahuatlán.

Remarks: (AMNH, CU, KANU, LA, LSU, MIN, RSC, RTM, US, WF; also a few specimens from the University of California Museum of Vertebrate Zoology and the private collections of L. L. Hargrave, Gale Monson, and J. A. Munro). This, not true *australis*, is the form described by Ridgway (1901) as being like *scottii*. Measurements of my series are: 3 ♂, length 157–165 [+], extent — - 211 [+], wing 62.5 [+?] - 64.5, tail 64–68.2 [+; worn] mm.; 3 ♀, length 155–156, extent 199 (—); wing 57.7–60.5 [+? still moulting]; tail 60.2, 63 [+(?)] mm.

As in many *Aimophilae*, most museum specimens of *ruficeps* are badly worn, and apparently often soiled. Even with fresh plumages, hazards are foxing and strange, almost haphazard geographic variations. The present case beautifully illustrates this complex, illogical dispersal of rusty- and grey-backed populations. Nelson (1897) named *australis* from a bird taken in the northern part of the Valley of Oaxaca [in the mountains] with only a "small amount" of grey in the back. Four specimens taken by me north of the Valley on 23rd November, 1958 agree with this description, being practically solid chestnut-rufous above, including the rump. Thus they bear little resemblance either to *extima*, on the south side of the same valley, or to fresh specimens from north-western Oaxaca (Tamazulapan and Huajuapan de León)! Yet they are extremely similar to birds from far-off Nayarit! Such a weird pattern obviously needs much fresh, authentic material from throughout the range for a proper appraisal.

Aimophila ruficeps pallidissima subsp. nov.

Description: A large race with extremely grey upperparts. Back strongly contrasted to crown, the feathers almost wholly pale, cold, clear grey (near Olive-Grey) with even the shaft-streaks devoid of rusty tones (Natal Brown approaching Fuscous). This greyness is approached by some *A. r. tenuirostris* Burleigh and Lowery, 1939: Guadalupe Mountains . . . Texas; but these (from the Davis Mountains, Texas) have the crown paler, near Russet (not approaching Bay). Also pale and dull ventrally, with very little tinge of pale Cinnamon-Buff on the median underparts (chest to crissum).

Types: Moore Zoological Laboratory nos. 38727, 26, and 34 ♂♂♀ (all well along in adult prebasic moult); Cuesta Blanca, 19 km. west of Saltillo, Coahuila, 23 and (2) 26th September, 1943; collected by C. C. Lamb (field nos. 9183, 9235–6).

Measurements of types: Wing 65.3 [+], 66, 62.3 [+; still in moult]; tail 74 [+? half missing], 73.5, 71.5 mm.

Material examined: Eleven from type locality and 80 km. south of Monclova, Coahuila (RTM); 1 ♂ imm., near Aramberri, southern Nuevo León (KANU) seems similar but perhaps smaller.

Remarks: Apparently this race is restricted to the arid interior; birds from southern Tamaulipas and "Nuevo León", according to Griscom (1934), are "dark above . . . much darker than *scottii*"; and some, at least, are smaller as well (Martin *et al.*, 1954). To the west, *simulans* van Rossem is decidedly smaller and deeper chestnut above than this or any race of the interior United States or adjacent México, despite my ill-advised doubts (in Phillips *et al.*, 1964).

Aimophila rufescens (Swainson), 1827

In the most recent review, by A. H. Miller (in Miller *et al.*, "1957"), the Mexican races are reduced to three, south and east of north-western Durango; *pallida*, [*sinaloa*], *subvespera*, and *cinerea* are all synonymized with *rufescens*, whose range thus includes the whole Pacific slope from southern Sinaloa, "Guanajuato", and southern Puebla to south-western Chiapas.

When only useful specimens, which retain some colour values, are compared, however, quite a different picture emerges. Four races are recognizable here, and two more in the area Miller assigned to *pyrgitoïdes.* Also, some Pacific birds (in Oaxaca) are just as dark as Caribbean specimens; and another nomenclatural complication results from the merger of *Amphispiza* Coues with *Aimophila* (Phillips *et al.*, 1964).

Although Ridgway himself (1901: 231) expressed his dissatisfaction with his generic arrangement of these sparrows, this was followed blindly by all authors until 1964. Prior to 1901, *Amphispiza* had usually been separated on colour; Ridgway transferred several of its species to *Aimophila*, commenting that "Considerable doubt attaches to the position of '*Zonotrichia*' *quinquestriata*", which "so strongly resembles *A*[*mphispiza*] *bilineata* that it seems almost unreasonable to place it in a different genus, but the wing-formula certainly agrees much better with that of *Aimophila*, the outermost (ninth) primary being shorter than the first, instead of equal to or longer than the third. Should it be finally decided to place this species in *Amphispiza*, the generic characters . . . would of course have to be modified . . ."

Actually, the more rounded-winged species are, as expected, those performing short or no migrations; the pointed-winged species have at least some (northern) populations that migrate for considerable distances. Ridgway himself united *Peucaea*, "ninth primary never shorter than third . . .", with *Aimophila*. The only other important difference supposed to separate these genera is the relative length of wing and tail. This proportion varies geographically in *Amphispiza bilineata* (van Rossem, 1945a) and *Aimophila botterii* (Phillips, 1943), and individually in *A. sumichrasti.* Thus I perceive no constant structural differences between *Aimophila*, "*Peucaea*", and "*Amphispiza*", and propose

Aimophila rufescens brodkorbi nomen nov.

Aimophila rufescens cinerea Brodkorb, 1940 (Auk 57: 549; "Cerro de la Gineta", [south-western] Chiapas); *nec Amphispiza belli cinerea* Townsend, 1890 (Proc. U.S. Nat. Mus. 13: 136).

Description: A large pale race. Crown Chestnut or Burnt Siena, and thus very similar to (though a bit brighter, more reddish than) *A. r. pallida* Nelson and Palmer, 1894: Etzatlán, Jalisco; but larger, with longer bill and tail. Culmen of ♂, from base, *ca.* 19–20 mm. (vs. 18.3–19); wing over 78 (♀ 73), whereas *pallida* rarely exceeds 79 (♀ 74). Crissum slightly paler.

Distribution: Mountains near the Pacific Ocean in extreme south-western Chiapas (and south-eastern Oaxaca?).

Remarks: (CAS, LDY, LSU, MIN, RTM, US, WF; also Texas A. & M. University, and a pair from University of California Museum of Vertebrate Zoology). The crown of *rufescens*, with which both these races were synonymized by A. H. Miller, is distinctly darker (Bay) in relatively recent, unworn specimens. Miller was apparently correct, however, in synonymizing *A. r. subvespera* Griscom, 1934: "Chilpancingo", Guerrero.

Aimophila rufescens newmani subsp. nov.

Description: Crown dark Liver Brown, as in *A. r. pyrgitoïdes* (Lafresnaye), 1839: México = Xalapa, Veracruz, but more strongly contrasted to the pale reddish (Verona Brown x Russet) upper back. Chest chiefly Pinkish Buff, and sides and flanks also richer, buffier (and paler) than *pyrgitoïdes.*

Distribution: North-eastern part of the species' range.

Types: Moore Zoological Laboratory nos. 38560 and 38584 ♂♂; 25 km. by road east of Ciudad del Maiz, San Luis Potosí, 1st and 3rd October, 1943; collected by C. C. Lamb (field nos. 9295, 9323).

Measurements of types: Wing 74.7, 73.7; tail 79 [+; worn], — mm.

Material examined: Four from type locality, and three from Scapa, near Huauchinango, north-eastern Puebla.

Remarks: This race is dedicated to Robert J. Newman, co-worker with George H. Lowery, Jr., on the *ornis* of San Luis Potosí and expert extraordinary on bird migration.

Aimophila rufescens disjuncta subsp. nov.

Description: A dark race, much like a slightly reddened *pyrgitoïdes* though with somewhat darker, duller flanks; differs from all dark races seen in brighter anterior underparts (which are *not* soiled): chest tinged with deep Pinkish Buff, somewhat approaching Cinnamon-Buff; malar stripe also somewhat deeper and warmer.

Distribution: First range of oak and pine—oak clad mountains facing the Pacific Ocean in south-western Oaxaca and Guerrero.

Types: Original nos. 7104, 7158, and 7213 ad. ♀ [ad.] ♀ ad. ♂; San Gabriel Mixtepec, Oaxaca, 25th and 29th November and 2nd December, 1963; collected by Juan Nava S., and 7158 prepared by him (rest by Santos Farfán B.).

Measurements of types: Length —, 192 [+?], 198 [+]; wing ?? (all worn, moulting); tail —, 73.2, 75 [+(?); still growing] mm.

Material examined: Eleven specimens.

Remarks: Birds from farther north (Sola de Vega and ridge south-west), east (near Portillo Nejapa), and west (Chilpancingo area, Guerrero) are all paler and duller. Thus the dark *disjuncta* is virtually surrounded by paler populations.

A. r. pyrgitoïdes has the chest essentially greyish, or more or less tinged with Pinkish Buff (but not a darker hue).

Aimophila carpalis distinguenda subsp. nov.

Description: (RTM) in colour closely similar to *A. c. carpalis* (Coues), 1873: [near] Tucson, Arizona, though the back is slightly browner, less greyish, in alternate plumage. Size decidedly smaller, about as in *A. c. cohaerens* Moore, 1946: Elota, southern Sinaloa; differs from the latter in paler rump, chest, and (to some degree) flanks, and lacks the rufous cast to back and rump that is usual in *cohaerens*.

Distribution: Northern Sinaloa and southern Sonora, northward probably (no specimens seen) to about 27° 40′ N. latitude.

Type: Moore Zoological Laboratory no. 11626 [adult?] ♂; Los Leones, northern Sinaloa, 30th March 1934; collected by J. T. Wright.

Measurements of type: Wing 61.8; tail 65.7 mm.

Remarks: This is *A. c. bangsi* Moore, 1932 (Proc. Biol. Soc. Wash. 45:232; Guirocoba, [southeastern] Sonora), *nec Amphispiza bilineata bangsi* Grinnell, 1927 (Auk 44:71). As long as the races were based on size alone, it was unimportant that Moore's Mexican birds are nearly all in worn, faded plumage. His type, likewise, is in the midst of the prealternate moult (*fide* van Rossem, 1945b). Now that colour is known to be important, however, it seems best to give a new, corrected description and designate as type Moore's *only* specimen still in unworn basic plumage, retaining colour values, rather than simply to rename *bangsi*.

Unfortunately, Moore's (1946) several mistakes give a misleading picture of this interesting bird. To those I once (1946) mentioned should be added his statements that, of *cohaerens*, "large series is so uniform . . . dark streaks of back wider and more prominent . . . In postnuptial plumage . . . chestnut of pileum darker; wing-tip much shorter. Compared with . . . *carpalis*, *cohaerens* shows the same differences, but to much greater degree; in addition . . . wing-tip fifty per cent smaller and wing much more rounded."

I, however, find *cohaerens* more variable and less distinctive. Variation in width of the dark streaks seems to me more individual than geographic. A darker pileum, if present "in postnuptial plumage" [*i.e.* worn basic or winter plumage?], would presumably reflect less fading in a greener, less harsh environment. Even in Arizona, an occasional fall immature (original nos. 402, 1185) is just as dark chestnut on the crown as my pair of *cohaerens* (immatures taken 18th January 1955). The latter's "much more rounded wing" escapes me entirely; in both races primaries 5 and 6 are longest, with 8, 7, and 4 nearly as long; while the 9th (outer) primary tends to be longer than the first in ♂♂, shorter in ♀♀. The "much shorter" wing-tip is due simply to proper preparation of the series of *cohaerens* by C. C. Lamb; the "*bangsi*" were skinned by another collector, who presumably "stripped" the secondaries crudely from the ulna. In my own series, personally prepared, the two races are identical in this feature.

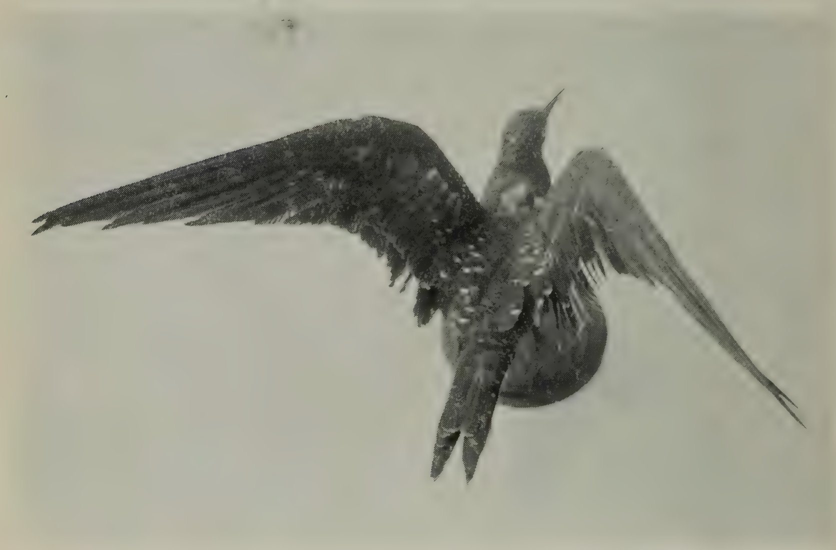
"Paler mandibles and tarsi", said by Moore (p. 123) to distinguish his southern races, seem to me rather the marks of mature birds. In fact, my pair of *cohaerens* have drab tarsi, *darker* than any *carpalis* at hand except for those that are still younger, judging by dates, plumages, and wholly unossified skulls. (The *cohaerens* were ossified laterally and anteriorly.) In bill colour I see nothing of note, in full-grown birds.

A Sooty Tern *Sterna fuscata* in Malawi

by G. HARRISON

Received 30th June, 1966

On 21st April, 1966 an immature Sooty Tern *Sterna fuscata* Linn. was picked up by T. P. Howe exhausted (it died shortly afterwards) at Lujeri, in the Mlanje District, southern Malawi, *ca.* 16° 00′ S., 35° 45′ E. It was preserved as a mounted specimen, now in the Museum of Malawi, Blantyre. It is sooty brown in colour, with white tips to the upperside feathers as shown in the accompanying photograph. Measurements are, wing 300, tarsus 25, culmen (exposed) 39 mm. The foregoing particulars and photograph (together with others taken from different angles) have been considered by C. W. Benson and Dr. D. L. Serventy, who agree with my identification. This is, of course, a maritime species, and its occurrence so far inland is most unusual. The nearest point on the sea-coast from Lujeri is in the vicinity of Quelimane, Mozambique, some 150 miles away in a south-easterly direction. The only other traced records inland from the eastern seaboard of Africa are also very recent. They are from the Transvaal, and were apparently the result of a cyclone: see editorial in *Bokmakierie*, 18(1), 1966: 22, and Wilson, *ibid.*, 18(2), 1966: 42. The weather conditions leading up to the Malawi recovery were briefly as follows.



Photograph by Robert Eden

Immature *Sterna fuscata* from Malawi

On 20th April there were strong winds, blowing from the east over southern Mozambique, thence from the south over southern Malawi, *i.e.* blowing directly up the Shire Valley. Thunderstorms occurred along the lower reaches of the Shire in the late afternoon and evening of the 20th, and on the following morning there was extensive fog and low stratus.

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Mr. John Yealland, The Zoological Society of London, Regent's Park, London, N.W.1. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

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DINNERS AND MEETINGS FOR 1966

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The six hundred and thirty-eighth meeting of the Club was held at the Rembrandt Hotel, London on the 22nd November, 1966.

Chairman: Mr. R. S. R. Fitter

Members present: 24; guests 13.

Birds in Holland

Jeffery and Pamela Harrison showed colour shots of a short visit to Holland taken in May 1966 on the occasion of the Second European Meeting on Wildfowl Conservation. Pictures were shown of various breeding reserves, notably at Naadermeer, on Texel and in Zeeland. The use of artificial reed platforms by nesting Black Terns was shown and discussed. Views were seen of the new barrage joining North and South Beveland Islands, as part of the great Delta Scheme. The likely effects of this on wildfowl and waders were mentioned, particularly the displacement of 20,000 Barnacle Geese and 10,000 Greylags—the latter having specialised feeding habits on sea club rush beds, which will all be destroyed.

The race of *Acrocephalus rufescens* in Zambia

by Melvin A. Traylor

Received 26th August, 1966

In 1957, Benson and White (Checklist Birds No. Rhodesia, p. 88) recorded the race of the Northern Rhodesian (=Zambian) populations of the Greater Swamp-warbler, *Acrocephalus rufescens*, as *niloticus*. White also used this name in his Checklist of Ethiopian Muscicapidae (Sylviinae) (1960, *Occ. Pap. Nat. Mus. So. Rhod.*, 24B, p. 413), but suggested that *niloticus* might prove to be the same as *ansorgei* of northern Angola. In 1962 (*Publ. Cult. Co. Diam. Ang.*, Lisboa, 58, p. 86) I was able to compare the type of *ansorgei* with two birds from Kabompo, western Zambia. These latter proved to be *ansorgei*, but with no material from eastern Zambia it was not possible to decide whether two races were present in that country, or whether *niloticus* was a synonym of *ansorgei*. In order to resolve this problem, I have borrowed specimens from East Africa, the eastern Congo, Zambia and Angola (including the type of *ansorgei*) so that direct comparisons of all populations could be made. For their kindness in lending these specimens I would like to thank Dean Amadon of the American Museum of Natural History, New York, and M. P. Stuart Irwin of the National Museum of Rhodesia, Bulawayo. I would also like to thank Con Benson for stimulating my interest and arranging the loans.

When specimens from Uganda, western Kenya, Zambia, Ngamiland and Angola are compared, they are found to belong to a single taxon for which *ansorgei* is the earliest name. Compared to nominate *rufescens*, *ansorgei* is larger and darker; wings of *rufescens* males measure 72–78, while those of *ansorgei* measure 77–82. The type of *ansorgei* is somewhat browner than recent specimens from Zambia, but it is over 60 years old, and this difference is most probably due to foxing. The range of *ansorgei* is the southern Sudan, Uganda, adjoining Congo, and extreme western Kenya; Zambia and Ngamiland; and north-west Angola in Malange and southern Cuanza Norte. A closely related and poorly marked race, *foxi*, is found in the highlands of south-west Uganda and Kivu. It is distinguished from *ansorgei* only on greater size, wing 80–85, and may not actually be recognizable.

Specimens from the west slopes of Ruwenzori and from the Ituri and upper Uelle are somewhat paler than normal *ansorgei*, and in this character, but not in size, show the influence of the West African *rufescens*. The latter ranges from southern Nigeria west to the central northern Congo and south to the Congo mouth and northern Cuanza Norte in Angola. An even paler small form, *chadensis*, is recorded from Lake Chad, and to round out the range of the species, Morel and Roux (1962, *Oiseau*, p. 49) record an isolated population from Richard Toll on the lower Senegal River. Their specimens of the latter were not adequate for subspecific determination.

On the "creaminess" in the plumage of *Ducula bicolor* (Scopoli)

by HUMAYUN ABDULALI

Received 10th September, 1966

The Pied Imperial Pigeon *Ducula bicolor* (Scopoli) ranges from the Andaman Islands in the Indo-Malayan region to New Guinea and Australia. It was noticed long ago that many portions of its plumage were creamy-white rather than white, and Stuart Baker (1928, *Fauna of British India, Birds*, 5: 211) noted that the creamy tinge varied greatly between individuals and faded rapidly in skins. It was generally accepted that this colour, often of a patchy nature and usually most prominent on the forehead and on the shoulders, was due to stains from nutmeg (*Myristica* sp.) and other fruits on which the birds fed. Robinson & Chasen (1936, *The Birds of the Malay Peninsula*, 3: 55) agreed with this view but drew attention to the fact that this ''staining'' was most noticeable in moulting birds.

In the course of the examination of a few specimens which I recently obtained in the Nicobar Islands, I noticed that the feathers around the rump had yellow bases which could only be seen by parting the feathers. With reference to the observation of Robinson & Chasen cited above, I should note that in this area newly developing feathers, while enclosed in quill, were yellowish with the intensity of the colour increasing towards the base. As the tip emerged from the sheath, it was white but showed bright yellow in the portions still enclosed. As the feather developed, the distal portion continued to lose colour, until only the shielded bases remained yellow. If pulled out, the portions ordinarily embedded in the skin showed a brighter colour, which may be termed ''butter-yellow'', as has been done by Robinson & Chasen (*loc. cit.*)

The creamy colour in the plumage of the pigeon is most constant on the forehead and in roughly symmetrical patches on the shoulders. As far as I could judge from a cursory examination of the larger series in the British Museum, this colour only occurred on such parts as could be reached by the forehead. I found on breaking the sheath that the colour at the base of the feather could be transferred on to paper by rubbing, and I would therefore suggest that this colour is first acquired on the forehead from the growing feathers on the rump and then transferred to the shoulders and other parts of the plumage in the process of preening.

On the South African races of the Crested Francolin, with special reference to *Francolinus sephaena zambesiae* Mackworth-Praed, 1920

by P. A. Clancey

Received 23rd September, 1966

When originally described, *Francolinus sephaena zambesiae* Mackworth-Praed, 1920: Mesanangue, 70 miles above Tete, Zambesi R., Moçambique, was stated to be smaller than the nominate race and to be rather paler, and its range was given as the Zambesi R. valley. Small size when compared with the nominate race of *F. sephaena* (Smith), 1836: Marico and Limpopo Rivers, western Transvaal, is a characteristic of all the south-east African littoral populations of the Crested Francolin as far south as Zululand, where the populations are actually darker and richer coloured and not paler than the xeric *F. s. sephaena.* Roberts (1940 and earlier, mainly 1935) considered lowland eastern Transvaal birds to represent *F. s. zambesiae*, and using material emanating from this region erected two dubious taxa from northern Bechuanaland (Botswana), *F. s. chobiensis* (Roberts), 1932: Kabulabula, Chobe R., and *F. s. mababiensis* (Roberts), 1932: Mababe Flats), while recently Mackworth-Praed and Grant (1962), Hall (1963) and White (1953, 1965) have merged populations of *F. s. sephaena* and the taxon *F. s. thompsoni* (Roberts), 1924: Grootfontein, northern South-West Africa, with *F. s. zambesiae*, giving it a range from north-western South-West Africa and southern Angola, east to about the Zambesi/Shiré confluence in Moçambique. Traylor (1965) has timeously drawn attention to the unsatisfactory state into which the subspecific grouping of the southern African populations of *F. sephaena* has drifted as a result of such uncritical lumping.

A careful study of the variation in *F. sephaena* in southern Africa recently carried out in the Durban Museum shows that five races require to be admitted, these being *F. s. rovuma* Gray, 1867: Rovuma R., southern Tanzania, *F. s. zuluensis* (Roberts), 1924: Umfolozi Game Reserve, Zululand, *F. s. zambesiae*, *F. s. sephaena*, and *F. s. thompsoni* (with *F. s. chobiensis* and *F. s. mababiensis* as synonyms based on intergrades between *thompsoni* ⪌ *zambesiae* and *sephaena*). Variation in this francolin affects general size, eastern coastal lowland birds being smaller than the plateau and dry western country ones. Other significant variation is in the nature of the colour of the tail, the extent to which the underside is suffused with buff and the degree to which it is vermiculated. Shifts in these variables are not all similarly stepped or follow the same distributional pattern, and none of the variation is truly clinal. The variation rather follows lines imposed by isohyetal, isothermal and altitudinal contours. As much of the present disagreement on the southern subspecies of *F. sephaena* seems to stem from the fact that few workers are aware of the true characters of *F. s. zambesiae* and its correct range. I have prepared the following description based on comparison with *F. s. sephaena* in order to set matters aright and to justify the races adopted in Clancey (1965), the ranges in which are here somewhat modified.

F. s. zambesiae is similar to the nominate race, but is rather lighter and more scaled on the crown and nape; lower hind neck and mantle brighter and redder (about Amber Brown [*vide* Ridgway 1912]), this bright red colour extended caudadwise over the lower mantle, scapulars, wing-coverts and tertials, which are distinctly less greyish or earthen brown than in *F. s. sephaena;* rump and upper tail-coverts washed with deep ochraceous-buff, less greyish-olive. Below, with the throat and breast spotting less dark Clove Brown and somewhat sparser, and the whole ground from the lower fore-throat to the under tail-coverts bright buff, the last named quite rusty in most; vermiculations to the breast and lateral body surfaces less dense, and long feathers to the sides of the body and flanks boldly streaked, often on both vanes, with deep tawny (no tawny lateral body streaks in other South African races). In wings, outer web to each primary cinnamon, not greyish-brown, and tail wholly redder, the inner pairs of rectrices about Argus Brown. Smaller in size on average: wings of ♂♂ 151—166.5, ♀♀ 150—161, as against 157—172 and 154—164 mm.

The range of *F. s. zambesiae* is from the northern districts of southern Moçambique to the west of the range of *F. s. rovuma* in the districts of Tete and Manica e Sofala, and adjacent northern Rhodesia, west to the Sebungwe sector and Wankie, penetrating into northern Botswana at Kasangula. Also in southern Zambia (west to about Livingstone) and southern Malawi (Lengwe; Chiromo). It may reach further west into south-eastern Angola, judging by Traylor's (1960) comments on birds from Capelongo. Intergrades with *F. s. sephaena* and *F. s. thompsoni* on the western periphery of its range.

As to the other South African races of this francolin: *F. s. rovuma* is probably specifically discrete from *F. sephaena*, though clearly a semi-species in the same superspecies, but it requires further study in the field at its point of contact with *F. s. zuluensis* in coastal Moçambique, and need not be discussed here. *F. s. zuluensis* is consistently smaller than *F. s. sephaena*, rather more saturated above and deep olivaceous-buff coloured below. It occupies the eastern coastal lowlands of Africa from Zululand and eastern Swaziland to about the Save R., in Moçambique. *F. s. sephaena* is larger than *F. s. zuluensis*, a little paler above, and more creamy, not deep olivaceous-buff, below, but the vermiculations are about the same. It ranges from north-eastern, northern and western Transvaal and the Rhodesian plateau in the south and west, to eastern and northern Botswana, apparently as far west as southern Ngamiland. *F. s. thompsoni* is like *F. s. sephaena* but is more sparsely vermiculated below on a paler ground, the vermiculations largely absent from the medio-ventral plane (see Traylor 1960), and is restricted to northern Damaraland and Ovamboland to north-eastern South-West Africa, (?) the western Caprivi, and south-western Angola.

F. s. zambesiae differs from all the foregoing in having the ground colour to the hind neck, mantle, scapulars, wing-coverts and tertials wholly redder, this tendency to redness also evident in the remiges and rectrices, while the trend is further evident by the presence of tawny streaks to the lateral body surfaces and flanks (which criterion is not present in other subspecies). The range, as given above, lies to the north-east of the ranges of the other races (apart from *F. s. rovuma*). It intergrades with *F. s. sephaena* and *F. s. thompsoni* in parts of northern Botswana and the eastern Caprivi.

For the loan of additional material to augment that already in the Durban Museum, I am grateful to Mr. Michael P. Stuart Irwin, Keeper of Ornithology, National Museum of Rhodesia, Bulawayo.

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On subspeciation in *Bias musicus* (Vieillot)

by P. A. Clancey

Received 2nd September, 1966

Subspecific variation in the African broadbilled flycatcher *Bias musicus* (Vieillot) has been discussed wholly or in part by numerous workers, the more important reports being those of van Someren (1922), Sclater (1930), Chapin (1953), Rand, Friedmann and Traylor (1959) and White (1963), four races being generally admitted, these being as follows: *B. m. musicus* (Vieillot), 1818: Malimbe, Portuguese Congo, *B. m. feminina* Jackson, 1906: Toro, Uganda, *B. m. changamwensis* van Someren, 1919: near Mombasa, coastal Kenya, and *B. m. pallidiventris* van Someren, 1922: Canhoca, Cuanza Norte, Angola. Variation in this flycatcher affects general size and the colour of the female and the male in pre-basic dress. Generally speaking, western birds are largest, and in females and young males have the mantle and scapulars boldly streaked with sepia, and the underside is pale buff, the breast and lateral surfaces washed with rusty, and the flanks are somewhat streaked or spotted with sepia. In eastern African birds the dorsal streaking is restricted to the upper mantle and the lower hind neck, and does not extend on to the remainder of the mantle and scapulars, which surfaces incline to be paler, and below, the ground is a lighter buff and the lower throat and breast are less or not overlaid with tawny. At the present time four racial names are utilized to describe this variation, two of them applicable to taxa which are intermediate in their putative characters between the marked western and eastern extremes. A recent examination of a reasonable panel of material in the Durban Museum has revealed that some of the variation described by workers is simply the result of wear and the metamorphic changes wrought in a relatively short space of time by the strong African sun, and is not genetically related. It now seems that the marked changes effected by these agencies have not been fully appreciated hitherto in arranging the populations of *B. musicus* into acceptable geographical races.

In freshly moulted females and young males of all populations of *B. musicus* the ground colour to the mantle, scapulars, rump and upper tail-coverts is about the Amber Brown of Ridgway (1912, pl. iii), but in most populations there is a marked change in the space of only a few months, when the same surfaces may appear Tawny or Ochraceous-Tawny (pl. xv). At the same time, the ground to the whole of the ventral surface whitens, and the issue is further complicated in that not all populations wear at the same rate or so drastically. However, in assessing the subspecific variation, conclusions must, of necessity, be restricted to birds in fresh dress.

To turn to the two names given to the "intermediate" populations, namely *B. m. feminina* and *B. m. pallidiventris*, I find that specimens from northern Angola (topotypical of the latter) and from Uganda (topotypical of the former, and including some skins of Jackson's own collecting) are not satisfactorily separable from the nominate race. In both territories, females and young males are heavily streaked over the whole mantle and scapulars as in nominotypical *B. musicus*, and the lightening over the lower throat and breast in Uganda birds seems to be no more than an incipient trend towards *B. m. changamwensis* in which the ground to these surfaces is definitely paler than in *B. m. musicus*. The underparts in the examples of *B. m. pallidiventris* examined, collected in October and December, are not whiter than examples of the nominate race in what I take to be a precisely comparable condition. It is interesting to note that the *Type* of *B. m. pallidiventris* is a late November bird and presumably in somewhat worn and faded condition. As both *B. m. feminina* and *B. m. pallidiventris* are not satisfactorily separable from *B. m. musicus* on the basis of the ventral coloration they should be merged with that race. Chapin (1953) only admitted *B. m. feminina* in deference to the views of others, and Schouteden (1955) referred all the Congo populations to the nominate race. These findings also substantiate the subspecific arrangement adopted by White (1963). This last named worker, however, considered the species to be inordinately variable, apparently not appreciating the seasonal variation induced by wear and sunlight, and I find the populations all relatively stable.

One other group of populations requires to be mentioned, and that is the one found in Moçambique and adjacent territories in the far south-east of the species' range. These populations have usually been associated with *B. m. pallidiventris* (=*B. m. musicus*), presumably on the basis of the white, not buff, underparts, but they are not applicable, as they have the largely unstreaked mantle and scapulars and small dimensions of *B. m. changamwensis*. Comparison between freshly moulted birds indicates that the very white ventral surface of the south-eastern populations is a valid character, and not one induced by wear or actinic action, and that separation from *B. m. changamwensis* on this and some additional characters is possible. For this population I have recently introduced the name *B. m. clarens* Clancey, 1966: Massinga, southern Moçambique.

The races of *Bias musicus* may therefore stand as follows:

(a) *Bias musicus musicus* (Vieillot), 1818: Malimbe, Portuguese Congo, with *B. m. feminina* Jackson, 1906: Toro, Uganda, and *B. m. pallidventris* van Someren, 1922: Canhoca, Cuanza Norte, Angola, as synonyms.

Female and young male in new moulted dress with mantle, scapulars, rump and upper tail-coverts deep Amber Brown, the feathers of the whole mantle and scapulars variably medially streaked with Sepia (pl. xxix), this dark streaking often present on the inner tertials and sometimes the wing-coverts and innermost rectrices. Underside about Light Buff (pl. xv), the lower throat, breast and lateral surfaces washed and somewhat streaked with Ochraceous-Tawny, the flanks variably overlaid or striated with Sepia. Wings of 10 ♂♂♀♀ 86–91 (88.3).

Range: Upper and Lower Guinea, from Sierra Leone and Liberia eastwards to the southern Sudan and western Uganda, and south to northern Angola, the Katanga, southern Congo, and, perhaps, western Tanzania.

(b) *Bias musicus changamwensis* van Someren, 1919: Changamwe, near Mombasa, coastal Kenya.

Female and young male in freshly moulted condition barely paler on the upperparts, but sepia streaking restricted to the lower hind neck and upper mantle, the lower mantle and scapulars plain Amber Brown. On underside, with the lower throat and breast less invaded with Ochraceous-Tawny, the ventral surface appearing paler. Size smaller. Wings of 10 ♂♂♀♀ 82–88 (84.9) mm. (coastal birds smaller than interior plateau specimens in this taxon: wings 82–85, as against 86.5–88 mm.).

Range: Eastern Uganda, Kenya (Highlands and coast), and Tanzania (not extreme west).

(c) *Bias musicus clarens* Clancey, 1966: Massinga, Sul do Save, southern Moçambique.

Like *B. m. changamwensis* on the upperparts in females and young males in pre-basic dress, but underside white, not pale buff, only the sides of the breast and lateral surfaces with some tawny overlay; malar streak almost white, and head-top matt black, and not sooty brown. Size the same. Wings of 10 ♂♂♀♀ 81.5–85.5 (83.9) mm.

Range: Moçambique, southern Malawi, and south-eastern Rhodesia. Northern range limits not known.

For the loan of material I am grateful to the Directors of the Field Museum of Natural History, Chicago, U.S.A. (through Major Melvin A. Traylor), the Institute Investigação Cientifica de Angola, Sà da Bandeira (Dr. A. A. da Rosa Pinto), the National Museum of Rhodesia, Bulawayo (through M. P. Stuart Irwin), the Transvaal Museum, Pretoria, and the Natal Museum, Pietermaritzburg.

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A new race of Wailing Cisticola *Cisticola lais* (Finsch and Hartlaub), from Gorongoza Mountain, Moçambique

by MICHAEL P. STUART IRWIN

Received 20th September, 1966

The population of the Wailing Cisticola *Cisticola lais* (Finsch and Hartlaub) occurring on Gorongoza Mountain, from whence it was first reported by Rosa Pinto (*Ostrich* Supplement 3, 1959: 114–115), is apparently confined to the region above the forest line from about 5,500 feet A.S.L. to the summit at just over 6,100 feet. Below the forest line up to 4,000 feet its place is taken by the Singing Cisticola *Cisticola cantans muenzneri* Reichenow, though Rosa Pinto does mention it as low as 3,000 feet. It is consequently restricted to a very limited area of the high central plateau occupying a range of probably considerably under 20 square miles, consisting of boggy montane grassland and meadow with abundant *Cyperaceae*, broken by rocky pinnacles and forest patches comprising *Podocarpus* and *Widdringtonia*, with scattered *Protea* and tall *Philippia* scrub. The geographical and biological isolation of this high zone is absolute, the nearest comparable suitable habitat from whence it is known being in the Inyanga highlands of eastern Rhodesia, the eastern 5,000 feet contour of which lies more than 70 miles to the west; the intervening country of the Manica platform averaging around 1,000 feet (Wellington, *Southern Africa, a geographical study*, 1, 1955; 40, fig. IV) and largely dominated by *Brachystegia* woodland. The species, however, may well also occur in the highlands west of Vila Gouveia, within Moçambique, faunally part of Rhodesia, where the intervening gap is no less great.

All previous material collected on the mountain that has been available, comprising some nine specimens obtained in the months of July, September and early October, are in non-breeding dress. However, in December, 1965, during an expedition undertaken by the National Museums of Rhodesia, six specimens were collected in freshly moulted breeding dress. When these are compared with similar material of *C. l. mashona* Lynes of eastern Rhodesia, and *C. l. semifasciata* Reichenow from the highlands in Malawi, eastern Zambia and southern Tanzania, it is immediately apparent that they represent an undescribed subspecies for which I propose the name of:

Cisticola lais oreobates subsp. nov.

Type: ♂ adult, from the montane zone at 6,000 feet on Gorongoza Mountain, near the peak of Monte Gogogo at 18′ 26° S., 34′ 02° E., 9th December, 1965. Collected by D. G. Broadley and party. Collectors No. GZA/134. National Museum registration No. 58,646. In the collection of the National Museum of Rhodesia, Bulawayo.

Description: In breeding dress differs from *C. l. mashona* in having the crown darker, less richly chestnut, streaking of mantle blacker with the feather margins more blackish-grey, less tawny. Below cold greyish-white without any infusion of buff as in the corresponding dress of *mashona*. In the tone of the back it bears a closer resemblance to *C. l. semifasciata*, though even blacker, and without the mottled crown. Below altogether different in the pale underparts compared to the tawny buff of *semifasciata* in breeding dress. In non-breeding dress the crown appears slightly brighter, but less chestnut than in *mashona*, the remainder of the upperparts being indistinguishable and below similar. Likewise from *semifasciata* the crown is a darker and richer brown, mantle with feather margins darker, more greyish-brown and much less tawny-buff below. Measurements in breeding dress 3 ♂♂ wing 58; tail 53–54; culmen 13–14; 3 ♀♀ wing 50–51; tail 48–49; culmen 12—12.5 mm. The four sexed individuals in non-breeding dress fall within the above general limits.

Material examined: 3 ♂♂, 3 ♀♀ in breeding dress, 2 ♂♂, 2 ♀♀ and 5 unsexed specimens in non-breeding dress collected in July (5), September (2) and October (2).

Range: The central plateau of the Gorongoza massif above 5,500 feet, Moçambique.

Measurement of the type: Wing (flattened) 58; tail 54; culmen (from base) 14 mm.

Remarks: The type and paratypes in breeding dress have the mantle and underparts freshly moulted, but with the rectrices heavily worn and in various stages of replacement. The birds themselves were coming on to breed, the females with the ovaries enlarging and the testes in one male measuring as much as 5 x 4 mm. on the 7th of December, the balance of the series being obtained on the 9th.

Acknowledgements:

I am grateful to the Director of the Instituto de Investigaçao Cientifica de Moçambique for the loan of the material housed in the Museu Dr. Alvaro de Castro, Lourenço Marques and similarly to Mr. B. G. Donnelly of the Museum, Snake Park and Oceanarium, Port Elizabeth. My thanks are also due to Mr. C. M. N. White who has examined with me the series of breeding birds and agrees that they should be recognised by name.

A new subspecies of the Yellow-bellied Whistler *Pachycephala philippinensis*

by KENNETH C. PARKES

Received 27th September, 1966

Geographic variation in the endemic Philippine whistler *Pachycephala philippinensis* has recently been reviewed by Rand and Rabor (*Fieldiana: Zoology*, 35, 1960, pp. 433–434). They admitted six subspecies. Most specimens I have examined accord well with their findings, but one subspecies, *P. p. apoensis* (Mearns) calls for comment. Rand and Rabor gave the range of this form as follows: ''Samar, Leyte, Dinagat, Bohol, and Mindanao west to Mount Malindang on northeastern Zamboanga.'' They stated that *P. p. basilanica* (Mearns) intergrades with *apoensis* in western Zamboanga. Specimens I have examined from Mount Malindang confirm this intergradation, being paler below and browner on the crown than topotypical *apoensis*, an obvious approach to *basilaniac*. Within the range now ascribed to *apoensis*, there is much variation in colour. The darkest birds seen are those from Mount Katanglad, Mindanao, and the palest those from Bohol. Specimens from Samar and Leyte are especially variable, some reaching almost the extremes in coloration displayed by the dark Katanglad and pale Bohol birds. Only the sample from the latter island appears to be consistent in its characters, and worthy of separation as an additional named subspecies, which may be called

Pachycephala philippinensis boholensis, subsp. nov.

Type: Field Museum of Natural History no. 223599, adult male, collected at Cantaub, Sierra Bullones, Bohol Island, Philippines, 4th May, 1955, by D. S. Rabor (collector's no. 10101).

Characters: nearest *apoensis* (as typified by specimens from Mount Apo, Davao, Mindanao and vicinity), but yellow of underparts paler, more mixed with white; green of back slightly paler; six outer primaries (not counting the very small outermost, which lacks light edgings) fully edged with grey, not green; primary coverts, alula, and tertials greyer, less green. In *apoensis* as many as five of the outer primaries may show some grey edging at the distal end, but only the single outermost is grey to the base, the others being green at least halfway to the tip. The colour of the underparts of certain individuals of *apoensis*, notably among those from Samar and Leyte, may sometimes be as pale as Bohol birds, but the grey primary edgings appear to be confined to *boholensis*. As is evident from the measurements of Mount Malindang, Bohol, and Samar specimens published by Rand and Rabor (*op. cit.*, pp. 301, 354, 405), there is no size difference between *apoensis* and *boholensis*.

Specimens examined (subspecies other than *apoensis* and *boholensis* omitted): MINDANAO, Mt. Apo and vicinity, 12; Mt. Malindang, 11; Mt. Katanglad and vicinity, 11; Cotabato, 2. SAMAR, 14. LEYTE, 13. BOHOL, 13.

Acknowledgments

Specimens were borrowed from or seen at the Field Museum of Natural History (formerly Chicago Natural History Museum), American Museum of Natural History, and Peabody Museum of Natural History at Yale University. Travel to these museums was partly supported by a grant from the Chapman Memorial Fund of the American Museum of Natural History for a project on the birds of Leyte Island.

The Fieldfare *Turdus pilaris* L. breeding in northern Rumania

by DAN MUNTEANU

Received 13th July, 1966

In Rumania the Fieldfare is a common and regular winter visitor. It is interesting that the time it spends in our country is now longer than that mentioned by Dombrowski (1912) for 1896–1909. He stated that the Fieldfare sojourns in Rumania from November until March, occasionally until April, but we observe that nowadays it comes regularly at the beginning of October and leaves as late as April.

The prolongation of the time it stays in Rumania is surely due to the southward extension of its breeding range, already noted in the last century. It is a slower spread than that of other species such as the Collared Dove or the Syrian Woodpecker. North of Rumania the expansion of the Fieldfare's range on the eastern slope of the Ukrainian Carpathians was pointed out (Strautman, 1954, 1963) where it had, until 1950, advanced southwards to Cheremosh river, at about 20 miles from our frontier. More recent observations in this area were not made.

With this in mind I decided to look for the Fieldfare in the north of Rumania, along the valleys of the eastern slope of the Eastern Carpathians. Three days of investigation along the intermontane valley of the Suceava river were fruitless, but on the fourth day, June 11, 1966, I found it in an unexpected place, in the Manastirea Humorului village, on a small affluent of the Moldova river, 25 miles south of the Ukrainian border.

In an orchard, on the valley of the Humor brook, I found two pairs of Fieldfare and their nests. One nest, built in an apple tree, about 12 feet above the ground, had five featherless chicks, five or six days old. The other nest, in a box elder about 300 feet from the first, 20 feet from the ground, was being built.

This is the first record of the breeding of the Fieldfare in Rumania.

Of course it nests sporadically in other places on the north-eastern extremity of the Rumanian Carpathians, but investigation of the extent of the breeding range of this species, is for the future.

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A further note on the Spike-heeled Lark *Chersomanes albofasciata* in East Africa

by C. W. Benson and A. D. Forbes-Watson

Received 15th June, 1966

Benson (1966) described *Chersomanes albofasciata beesleyi* on a single specimen from 30 miles north of Arusha, northern Tanzania, collected by J. S. S. Beesley. Forbes-Watson collected six further specimens on 10th–11th April, 1966 in the same locality, which may be known as Kingerete, at 3° 00′ S., 36° 40′ E., altitude 4,600 feet above sea-level. Their measurements in mm. and some other particulars are as follows:—

Sex	*Wing*	*Tail*	*Culmen from base*	*Tarsus*	*Hind claw*	*Weight in gms.*
♂	81	39	21.5	29	19	26.0
♂	79	36	21	28	15	28.5
♂	81	37	20	28	18	28.0
♀	72	33	18	26	14	21.5
♀	71	33	18	27	14	23.5
juv. ♂	78	38	19.5	28	12	25.5

This further material has been compared with the type of *beesleyi* (an adult male) and with other material of the species previously examined by Benson (1966) in the British Museum. His diagnosis of *beesleyi* is borne out in all respects so far as it goes. But in addition the two females are as somewhat richer russet on the lower chest to abdomen than the four apparently adult males, and seem nearer in this respect to *C. a. subpallida* (Roberts) rather than to *C. a. obscurata* (Hartert) or *C. a. boweni* (de Schauensee). Also, while dusky streaking on the chest is relatively well developed in both sexes, these markings seem slightly more so but less bold in males. Thus there may be minor sexual colour differences in *beesleyi*, apparently lacking in any of the southern forms, so widely separated from it. All five of the additional adults are rather more brownish, less greyish in tone on the upperside than the type, but are in fresher dress. They are an even closer match in this respect to *Pseudalaemon fremantlii delamerei* Sharpe and *Calandrella rufescens athensis* (Sharpe). The small size of *beesleyi* is also confirmed by the additional material.

The measurements may be compared with those for the southern forms in McLachlan and Liversidge (1957: 255) and Mackworth-Praed and Grant (1962: 633–637). The juvenile lacks any rufous on the nape, and has the feathers of the upperside as a whole less markedly tipped with white than in adults. On the underside the markings on the chest are larger and smudgier than in adults, while the lower chest to abdomen is paler, though there are some darker, adult feathers appearing.

The birds were found in an entirely treeless area covering some three square miles, entirely surrounded by plains with scattered small thorn trees. There was much stony terrain, which however they seemed to avoid, confining themselves to short (less than one foot high) grass. About 20 individuals were seen in all, mostly singletons or pairs, the most seen together being four. When disturbed, they would fly away to settle some distance ahead, thereafter to be flushed close to where they had landed. In flight they made wader-like calls, those recorded by McLachlan and Liversidge (1957: 255) being apparently very similar.

One of the females collected had evidently recently bred, but no other specimen showed any marked gonad activity. The stomach contents were examined by R. H. Carcasson, who found the main food to be curculionids (weevils), present in all six specimens, while three also had tenebrionids (*Diodontes areolatus* Gerst.), and one had a buprestid. In addition there was a 75 mm. long centipede, three lepidopterous larvae including one psychid without its case, and one grass seed. Only one contained any grit, merely a single small angular pebble.

Benson is responsible for the comments on the specimens in this note; Forbes-Watson has provided the remainder of the information. A male and a female of the material he has collected are to be deposited in the National Museum, Nairobi, Kenya; the remainder in the British Museum.

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Some sunbirds: additions and corrections

by C. W. Benson

Received 6th May, 1966

With reference to the notes in *Bull. Brit. Orn. Cl.*, 1966: 62–66, the correct name for the southern and eastern form of *Nectarinia seimundi* (Ogilvie-Grant) is not *N. s. minor* (Bates) but *N. s. traylori* Wolters (*Journ. Ornith.*, 1965: 357).

Three further males of *N. bouvieri* (Shelley) have been traced in the British Museum, their localities and measurements in mm. as follows:

	Wing	*Tail*	*Culmen from base*
Mubuku Valley, Uganda	57	38	21
Sandoa, southern Congo	56	37	23
Sandoa, southern Congo	57	38	24

It would appear that there is a tendency to greater bill-length in the south of the range of the species.

Yet another female of *N. b. bifasciata* (Shaw), originally identified as *N. bouvieri*, and collected by Petit in Cabinda at Chinchoxo (B. M. registered number 95. 5. 1. 2530), has been traced. It has wing 51, tail 32, culmen from base 19.5 mm. Number 2529 is a male, the type of *bouvieri*.

On two specimens of *Pericrocotus flammeus* (Forst.), the Scarlet Minivet, from Udjung Kulon

by A. HOOGERWERF

Received 25th April, 1966

During a collecting trip to Java's most western peninsula, Udjung Kulon, two specimens of *Pericrocotus flammeus* were secured which do not fit into a series of *siebersi* nor do they agree with the Sumatran subspecies *xanthogaster*, *modiglianii* and *minythomelas*. Therefore they seem important enough to be signalized in order to encourage future collectors in this area to pay special attention to the species. Below is a comparison with the material of the species in the Bogor Museum.

The individual variation in plumage of both sexes of *siebersi* is not worth mentioning. In the males there is some difference in tone of the orange-red on the underparts, the wings and the lower back including the tail-coverts but those parts are always less pure red than in the three other subspecies mentioned above. There is also some variation in the tint of the black parts but the average *siebersi* seems less extensively bluish-black than males of the three other races.

The females show some variation in extent of the yellow spot on the forehead and the yellow on the wings and they also vary somewhat in the tone of this colour on the under surface, lower back and tail-coverts. But this yellow, as is the case with the red in the males, is of a different tone than in females of the other subspecies known from Sumatra and surrounding islands.

Junge[2] and Deignan[1] made it clear that *modiglianii* and *minythomelas* differ in size: birds belonging to the latter race average somewhat smaller, but perhaps the colour difference in the females of both these forms may be seen as the most important character to separate them as pointed out also by Deignan[1]. According to Junge[2] there should be no colour differences in the plumage of both these subspecies when compared with *xanthogaster*, except for the somewhat yellowish tint of the red in both mentioned races when seen in series. I could not confirm this, but my material shows a darker fire-red tone in the males of *xanthogaster* than in both other subspecies, though certain individuals cannot be separated at all. But I did not compare these subspecies on the basis of Deignan's conception regarding colour and markings on rectrices and primaries because I could not see Deignan's paper when comparing my material in Bogor.

Both our fresh skins from Udjung Kulon seem somewhat intermediate between representatives of the Javan subspecies *siebersi* and *xanthogaster* from Sumatra because the male is decidedly brighter red on the lower back, upper tail-coverts and wings than all *siebersi* examined by me, but not so dark as in the average *xanthogaster*. It is also deeper black in the dark portions than almost all *siebersi* studied by me; also in this respect more resembling Sumatra's population. On the under surface too the Udjung Kulon male is more intensely red than most Javan birds, but not so clear red as in *xanthogaster*. When compared with some specimens belonging to *excul* from the Lesser Sunda Islands (Lombok) the difference is still more striking because this subspecies averages lighter in the red of the male than *siebersi*.

The female obtained from Udjung Kulon resembles *xanthogaster* females in the same respect as does the male, the yellow on all parts of the plumage resembles that of *xanthogaster* because it is less pure, more washed with olive than in all females of *siebersi* seen by me.

Besides these differences in colour there is also one in size between *xanthogaster* and *siebersi*, at least in the males. And also on this point our Udjung Kulon male seems to be closer to the Sumatran race than to that inhabiting Java for it has a wing length of 87 mm. which is much larger than the average wing size of all 15 males of *siebersi* measured by Junge (in litt.). and me of which only one reaches a wing-length of 86, three of 84 and one of 83 mm. The subspecies *modiglianii* and *minythomelas* are considerably larger and differ also in plumage from both *siebersi* and *xanthogaster*. On account of the diagnosis given for the female of the Bornean race *insulanus* of which the male should not differ from that of *xanthogaster*, the female from Udjung Kulon cannot be identical with this race, even if it should agree in size which seems not to be so.

Though there seems some reason to separate these birds, I do not think it reasonable to do so because only one male and one female are available of which, moreover, the female still shows some traces of the juvenile plumage. Until more material becomes available, showing the same characters as both birds described above, there is not enough evidence to exclude the possibility of interbreeding.

Measurements (*in mm.*):

♂♂ Wing; *siebersi* (Java): 79, 82, 82, 83, 86; *siebersi?* (Udjung Kulon): 87; *excul* (Lombok): 85, 85; *xanthogaster* (Sumatra): 82, 84, 86, 87, 87; *modiglianii* (Enggano Island): 93, 95; *minythomelas* (Simalur Island): 95.
Tail; *siebersi* (Java): 78, 79, 81, 83, 85; *siebersi?* (Udjung Kulon): 85; *excul* (Lombok): 83, 86; *xanthogaster* (Sumatra): 73, 77, 77, 79, 85; *modiglianii* (Enggano Island): 82, 85; *minythomelas* (Simalur Island): 89.

Culmen; *siebersi* (Java): 11, 11.3, 11.9, 12.5, 12.5; *siebersi?* (Udjung Kulon): 10.6?; *excul* (Lombok): 10.5, 11.5; *xanthogaster* (Sumatra): 12, 12, 12.1, 12.5, 12.5; *modiglianii* (Enggano Island): 13, 14.5; *minythomelas* (Simular Island): 12.3.

Max., min. and average measurements:

	siebersi Java	*siebersi?* Udj. Kulon	*excul* Lombok	*xanthogaster* Sumatra	*modiglianii* Enggano Isl.	*minythomelas* Simalur
Wing:	79–86 82.40	87	85–85 85	82–87 85.20	93–95 94	95
Tail:	78–85 81.20	85	83, 86 84.50	73–85 78.20	82, 85 83.50	89
Culmen:	11–12.6 11.86	10.6?	10.5, 11.5 11	12–12.5 12.22	13, 14.5 13.75	12.3

♀♀ Wing; *siebersi* (Java): 80, 82, 83, 85, 86; *siebersi?* (Udjung Kulon): 83; *excul:* none; *xanthogaster* (Sumatra); 82, 82, 84, 85, 85; *modiglianii* (Enggano): 89, 94; *minythomelas* (Simalur): none;
Tail; *siebersi* (Java): 77, 81, 83, 85, 85; *siebersi?* (Udjung Kulon): 86; *xanthogaster* (Sumatra): 75, 78, 79, 80, 80; *modiglianii* (Enggano): 85, 87;
Culmen; *siebersi* (Java): 10.2, 10.9, 11, 11.6, 11.9; *siebersi?* (Udjung Kulon): 11.5; *xanthogaster* (Sumatra): 11.1, 11.1, 11.2, 11.8; *modiglianii* (Simalur): 13, 13;

Max., min. and average measurements:

	siebersi Java	*siebersi?* Udjung Kulon	*xanthogaster* Sumatra	*modiglianii* Enggano
Wing:	$\frac{80\text{–}86}{83.20}$	83	$\frac{82\text{–}85}{83.60}$	$\frac{89,\ 94}{91.50}$
Tail:	$\frac{77\text{–}85}{82.20}$	86	$\frac{75\text{–}80}{78.40}$	$\frac{85,\ 87}{86}$
Culmen:	$\frac{10.2\text{–}11.9}{11.12}$	11.50	$\frac{11.1\text{–}11.8}{11.30}$	$\frac{13,\ 13}{13}$

siebersi (measured for me by Dr. Junge at Leiden):

	Wing:	*Tail:*	*Culmen:*
10 ♂	$\frac{80\text{–}84}{81.50}$	$\frac{74\text{–}82}{77}$	$\frac{11\text{–}14}{12}$
5 ♀	$\frac{79\text{–}83}{81}$	$\frac{77\text{–}81}{79}$	$\frac{11\text{–}14}{12}$

Some measurements compiled from literature:
Junge[3]: *minythomelas:*
Wing, 9 ♂ 88–94; Tail: 81.5–90; Culmen: 12–14
Wing, 2 ♀ 87.5–90; Tail: 86, 87.5; Culmen: 12, 13
Robinson & Boden Kloss[4]:
xanthogaster:
Wing, 9 ♂ $\frac{82\text{–}87}{84}$
Wing, 10 ♀ $\frac{80\text{–}87}{84.10}$
Deignan[1]:
minythomelas: Wing, 9 ♂ 90–94
3 ♀ 88–90
insulanus: Wing, 3 ♂ 81–84
3 ♀ 80
excul: Wing, 3 ♂ 82–85
3 ♀ 81–83
modigliannii: Wing, 14 ♂ 92–96
5 ♀ 92–93
siebersi: Wing, 6 ♂ 80–84
2 ♀ 77
xanthogaster: Wing, 2 ♂ 77–86
1 ♀ 88

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CONTRIBUTORS

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